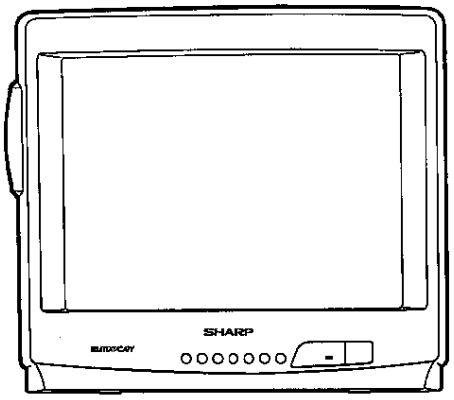
SHARP

# SERVICE MANUAL
# SERVICE-ANLEITUNG

S43V4CV4045S/



## PAL SYSTEM
## COLOUR TELEVISION
## FARBFERNSEHGERÄT

***Chassis No. 14B*** ***Chassis Nr. 14B***

## MODEL / MODELL CV-4045S

In the interests of user-safety (Required by safety regulations in some countries ) the set should be restored to its original condition and only parts identical to those specified should be used.

Im Interesse der Benutzer-Sicherheit (in einigen Länder durch Sicherheitzvorschriften gefordert) sollte dieses Gerät wieder auf seinen ursprünglichen Zustand eingestellt und nur die vorgeschriebenen Teile verwendet werden.

The last letter of the model name on the catalog, packing case, etc. indicates the colour of the product.

**(GY)**: Metallic Gray **(W)**: White

Die am Ende der Modellnummer in Klammern gesetzten Buchstaben — auf dem Katalog, Verpackungskarton usw. — entsprechen den Gehäusefarben.

**(GY)**: Mattgrau-Metallic **(W)**: Weiß

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SHARP CORPORATION

# ELECTRICAL SPECIFICATIONS

| | |
|---|---|
| Convergence | Self Converging System |
| Focus | Quadra-Potential Electrostatic |
| Sweep Deflection | Magnetic |
| Intermediate Frequencies | |
| Picture IF Frequency | 38.9MHz |
| Sound IF Carrier Frequency | 33.4MHz |
| Colour Sub-Carrier Frequency | 34.47MHz |
| Power Input | 220—240V AC, 50Hz |
| Power Consumption | 70W |
| Audio Power Output Rating | 1.5W (MPO) |
| Speaker | |
| Size | 8cm Round Dynamic Type x 1pc. |
| Voice Coil Impedance | 32 Ω at 400Hz |
| Aerial Input Impedance | |
| VHF/UHF | 75 Ω Unbalanced |
| Receiving System | CCIR PAL B/G |
| Tuning Ranges | |
| VHF-Channels | E2 (48.25 MHz) thru E12 (224.25 MHz) |
| | S1 (105.25 MHz) thru S20 (294.25 MHz) |
| UHF-Channels | E21 (471.25 MHz) thru E69 (855.25 MHz) |

*Specifications are subject to change without prior notice.*

# TECHNICHE DATEN

| | |
|---|---|
| Konvergenz | Selbstkonvergierendes System |
| Scharfeinstellung | Vierfach-Potential elektrostatisch |
| Ablenkung | Magnetisch |
| Zwischenfrequenzen | |
| Bild-ZF-Trägerfrequenz | 38,9 MHz |
| Ton-ZF-Trägerfrequenz | 33,4 MHz |
| Farb-Hilfsträgerfrequenz | 34,47 MHz |
| Netzspannung | 220—240 V Netzstrom, 50 Hz |
| Leistungsaufnahme | 70 W |
| Ton-Ausgangsleistung | 1,5 W (Max.) |
| Lautsprecher | |
| Größe | 8cm runder, dynamischer Typ x 1 Stück |
| Schwingspulen-impedanz | 32 Ω bei 400Hz |
| Antennen-Eingangsimpedanz | |
| VHF/UHF | 75 Ω unsymmetrisch |
| Empfangssystem | CCIR PAL B/G |
| Abstimmbereiche | |
| VHF-Kanäle | E2 (48,25 MHz) bis E12 (224,25 MHz) |
| | S1 (105,25 MHz) bis S20 (294,25 MHz) |
| UHF-Kanäle | E21 (471,25 MHz) bis E69 (855,25 MHz) |

*Änderungen vorbehalten*

## WARNING

**The chassis in this receiver is partially hot. Use an isolation transformer between the line cord plug and power receptacle, when servicing this chassis.**
**To prevent electric shock, do not remove cover. No user — serviceable parts inside. Refer servicing to qualified service personnel.**

E2

## WARNUNG

**Das Chassis dieses Empfangsgerätes steht teilweise unter hohen Spannungen. Bei Wartungsarbeiten an diesem Chassis muß deshalb ein Isolationstransformator zwischen dem Netzkabelstecker und der Steckdose verwenden.**
**Um elektrische Schläge zu vermeiden, darf das Abdeckgehäuse nicht entfernt werden. Im Inneren des Gerätes befinden sich keine vom Benutzer einstellbaren Teile. Wartung und Reparaturarbeiten müssen qualifiziertem Service-Personal überlassen werden.**

G2

# IMPORTANT SERVICE NOTES

**Maintenance and repair of this receiver should be done by qualified service personnel only.**

## SERVICING OF HIGH VOLTAGE SYSTEM AND PICTURE TUBE

**When servicing the high voltage system, remove static charge from it by connecting a 10k ohm Resistor in series with an insulated wire (such as a test probe) between picture tube dag and 2nd anode lead. (AC line cord should be disconnected from AC outlet.)**

1. Picture tube in this receiver employs integral implosion protection.
2. Replace with tube of the same type number for continued safety.
3. Do not lift picture tube by the neck.
4. Handle the picture tube only when wearing shatterproof goggles and after discharging the high voltage completely.

## X-RAY

**This receiver is designed so that any X-Ray radiation is kept to an absolute minimum. Since certain malfunctions or servicing may produce potentially hazardous radiation with prolonged exposure at close range, the following precautions should be observed:**

1. When repairing the circuit, be sure not to increase the high voltage to more than 29 kV, (at beam 950 $\mu$A) for the set.
2. To keep the set in a normal operation, be sure to make it function on 23.5 kV ± 1.5 kV (at beam 950 $\mu$A) in the case of the set. The set has been factory — Adjusted to the above-mentioned high voltage.
   ∴ If there is a possibility that the high voltage fluctuates as a result of the repairs, never forget to check for such high voltage after the work.
3. Do not substitute a picture tube with unauthorized types and/or brands which may cause excess X-ray radiation.

## BEFORE RETURNING THE RECEIVER

**Before returning the receiver to the user, perform the following safety checks.**

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.
2. Inspect all protective devices such as non-metallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacity networks, mechanical insulators etc.



# WICHTIGE SERVICE-HINWEISE

**Wartung und reparaturarbeiten an diesem Empfänger sollten nur von qualifizierten kundensttechnikern ausgeführt werden.**

## WARTUNG DES HOCHSPANNUNGSSYSTEMS UND DER BILDRÖHRE

**Bei wartung des Hochspannungssystems leiten Sie dessen Statische Aufladung durch Zwischenschalten eines 10-kiloohm-Widerstandes mit hilfe eines isolierten Drahtes (wie z.B einer Prüfsonde) zwischen die Netzkabelstecker solte dabei aus der Netzteckdose gezogen werden.)**

1. Für die Bildröhre in diesem Empfänger wir dein integrierter Implosions-schutz verwendet.
2. Ersetzen Sie die Bildröhre durch eine Röhre mit derselben Typennummer, um eine dauernde Sicherbeit zu gewährleisten.
3. Haben Sie die Bildröhre nicht am Hals hoch.
4. Fassen Sie die Bildröhre nur dann an, wenn Sie eine splitterfreie Schutzbrille tragen und nachdem Sie die Hochspannung vollkommen ableiteten.

## RÖNTGENSTRAHLUNG

**Dieser Empfänger wurde so gebaut, daß Röntgenstrahlung auf einem absoluten Minimum gehalten wird. Da durch bestimmte Funktions-störungen und Wartungsarbeiten beim längeren Ausgesetztsein in unmittelbarer Nähe eine eventuell gefährliche Strahlung verursacht werden kann, sollten die folgenden Vorsichtsmabregeln beachtet werden:**

1. Beim Reparieren der Schaltung darauf achten, daß die Stromstärke für das Gerät auf nich mehr als 29 kV, (Strahlstrom = 950 $\mu$A) erhöht wird.
2. Um das Gerät in normalen Betriebszustand zu halten, darauf achten, daß die hochspannung 23,5 kV ± 1,5 kV (Strahlstrom = 950 $\mu$A) befrägt. Das Gerät Wurde im Werk auf die obenerwähnte Hochspannung eingestellt.
   ∴ Falls die Möglichtkeit besteht, daß die Hochspannung infolge von Arbeiten die Hochspannung zu überprüfen.
3. Die Bildröhre darf nicht gegen andere Type oder Bildröhren anderer Firmen ausgetauscht werden, da diese übermäßig hohe Röntgenstrahlung verursachen könnten.

## VOR RÜCKGABE DES EMPFÄNGERS

**Bevor dem Empfänger an den Kunden Zurückgeben, sollten Sie die folgenden Sicherheitsüberprüfungen vornehmen.**

1. Überprüfen Sie sämtliche Leitungen, um sich zu vergewissern, daß diese nicht eingeklemmt sind, oder daß sich keine Kleinteile zwischen dem Chassis und anderen Metallteilen im Empfänger befinden.
2. Überprüfen Sie sämtliche Schutzvorrichtungen, wie z.B die nichtmetallischen Reglerknöpte, Isolierpapiere, Gehäuserückseiten, Einstell - und Zwischen-raumabdeckungen oder Anschirmungen, Isolierwiderstands-Kapazitätsnetzwerde, mechanische Isolatoren usw.

# SERVICE ADJUSTMENT

## PIF/AFT/AGC ADJUSTMENT

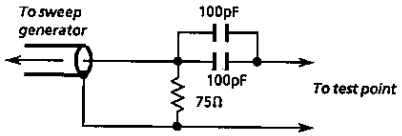
| Adjusting Conditions | Adjusting Procedures |
|---|---|

### 1. Tuner IFT Coils

**The tuner has been factory preset (no adjustment is needed).**
**T202 and T201 have been factory preset (no adjustment is needed).**

Adjusting Point
- ☐ **T201: Adjacent Sound Trap coil**
- ☐ **T202: Adjacent Picture Trap coil**

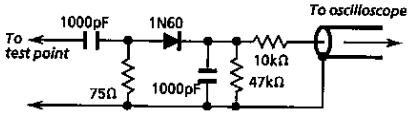
1. Set reception channel at E10 (When such signal is not available, set $V_T$ voltage at 10V in $V_H$ band.)
2. Connect sweep generator's output to the test point of tuner, by using a 75Ω DC cut probe.




***Connection Diagram of 75Ω DC Cut Probe.***

***Note: The sweep generator's probe should be grounded closely to the tuner test point.***

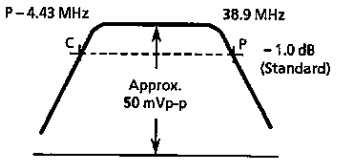
3. Output level of sweep generator: 85 dB
4. Connect response lead (low impedance probe with detector) to TP201 (collector of Q201).




***Connection Diagram of Low Impedance Probe (with Detector).***

5. PIF AGC:
   Apply DC 4.0V to TP202 (pin (48) of IC801).
6. RF AGC:
   Apply DC 4V to the tuner AGC terminal.
7. Let T201 and T202 detuned.

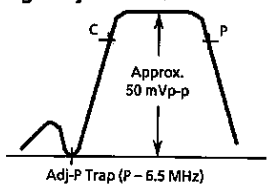
1. Adjust the tuner IF coils to obtain the waveform as shown figure below.




***Adjust so that "P"and "C" are at the same level.***

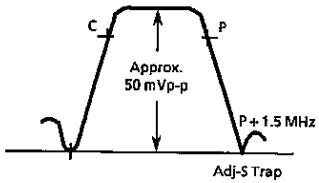
2. Adjust T202 (Adj-P trap so that the trap is at P – 6.5 MHz).

**Rough adjustment**




3. Adjust T201 (Adj-S trap) so that the trap is at (P + 1.5) MHz.

**Rough adjustment**




4. Fine adjustment of T201 and T202.
   While narrowing the sweeping range and widening the trap point, raise the sweep generator's output by 10 dB and finely adjust T201 and T202 to obtain more accurate trap point.

**Note:**
**T201 and T202 are traps against the interference at FTZ input terminal, and they require minute adjustment.**



# WARTUNGSEINSTELLUNG

## PIF/AFT/AGC-EINSTELLUNG

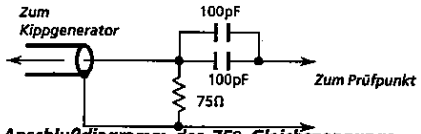
| Einstellbedingungen | Einstellverfahren |
|---|---|

### 1. Tuner-IFT-Spulen

**Der Tuner wurde werkseitig eingestellt (keine Einstellung erforderlich).**
**T202 und T201 wurden werkseitig eingestellt (keine Einstellung erforderlich).**

Einstellpunkt
- ☐ **T201: benachbarte Tonfalle**
- ☐ **T202: benachbarte Bildfalle**

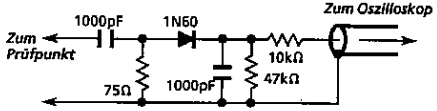
1. Den Empfangskanal bei E10 einstellen. (Wenn ein derartiges Signal nicht vorliegt, die $V_T$-Spannung bei 10 V im $V_H$-Band einstellen.)
2. Den Ausgang des Kippgenerators mit dem Prüfpunkt des Tuners verbinden und hierfür einen 75 Ω Gleichspannungs-Meßfühler benutzen.




***Anschlußdiagramm des 75Ω Gleichspannungs-Meßfühlers***

***Hinweis: Der Kippgenerator-Meßfühler muß nahe des Tuner-prüfpunkts geerdet werden.***

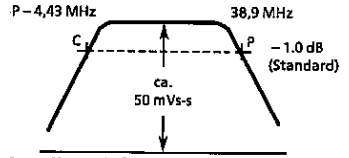
3. Ausgangspegel des Kippgenerators : 85dB
4. Das Eingangskabel (niedriger Impedanz-Meßfühler mit Detektor) an TP201 anschließen (Kollektor von Q201).




***Anschlußdiagramm für niedrige Impedanz-Meßfühler (mit Detektor).***

5. PIF AGC:
   4,0 V Gleichspannung an den TP202 anlegen (Stift (48) von IC801).
6. HF AGC:
   4 V Gleichspannung am Tuner AGC-Anschluß anlegen.
7. T201 und T202 nicht abstimmen.

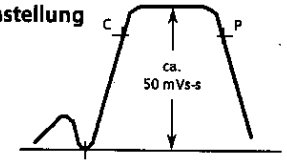
1. Die Tuner ZF-Spulen einstellen, um die nachfolgende wellenform zu erhalten.




***So einstellen, daß "P" und "C" den gleichen Pegel aufweisen.***

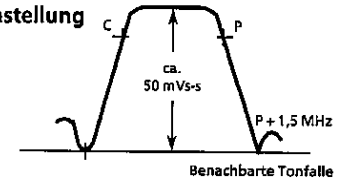
2. T202 einstellen (benachbarte Bildfalle), daß die Falle einen Wert von P-6,5 MHz aufweist.

**Grobeinstellung**




3. T201 einstellen (benachbarte Tonfalle), daß die Falle einen Wert von P + 1,5 MHz aufweist.

**Grobeinstellung**




4. Feineinstellung von T201 und T202 Während der Einengung des Kippbereichs und der Erweiterung des Fallenpunkts, die Ausgangsleistung des Kippgenerators um 10 dB anheben und schließlich T201 und T202 einstellen, um eine genauere Fallenpunkt zu erzielen.

**Hinweis:**
**T201 und T202 sind Fallen gegen die Interferenz des FTZ-Eingangsanschlusses (geringfügige Einstellungen sind erforderlich).**

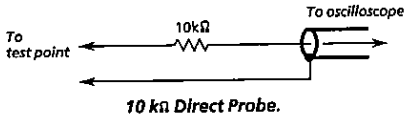
# PIF/AFT/AGC ADJUSTMENT (Continued)

| Adjusting Conditions | Adjusting Procedures |
|---|---|

## 2. P-Detector Adjustment

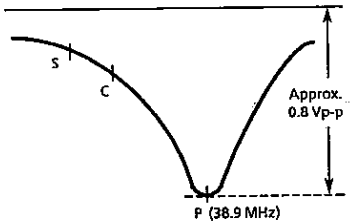
Adjusting Point
☐ T205: P-Detector coil

1. Connect sweep generator's output to TP203 (pin (46) of IC801).
   - Probe in use: 75Ω DC cut probe
   - Sweep output level: 90 dB
2. PIF AGC:
   Apply 4.0V DC to TP202 (pin (48) of IC801).
3. Have AFT muted (by pressing the preset key to bring in the SEARCH mode).
4. Connect response lead to TP204.
   The response lead in use should be a direct probe with a resistor of 10 kΩ included.



*10 kΩ Direct Probe.*

1. Adjust T205 so that 38.9 MHz signal is at maximum (± 50 kHz).




* Adjust PIF AGC voltage so that the output waveform is of approx. 0.8 Vp-p.

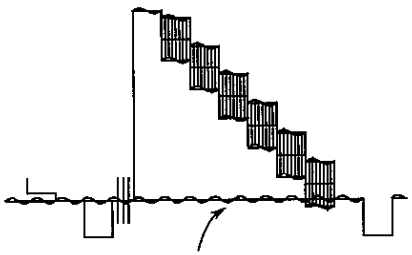
## 3. AFT Adjustment

**Fine Adjustment**

Adjusting Point
☐ T205: AFT coil

1. Receive "PAL COLOUR BAR (Channel-E12)" signal. If channel-E12 signal is not available, it is enough to receive the signal of more than $V_H$ band signal.
   - Signal strength: Over 55dB, Below 80dB
2. Connect the DC power supply to the tuner's $V_T$ (approx. 11V to be applied) to receive channel-E12.
3. Connect oscilloscope to TP205.
   - Oscilloscope range: 0.5 V/div.
   - Sweep time: 20 μsec/div.
   - Synchronization: Horizontal sync.
4. Connect the output of SSG (Standard Signal Generator) to the tuner IF output terminal across a capacitor of 1pF.
   - SSG output: 38.9 MHz ± 5 kHz (non modulated)
   - SSG output level: approx. 85 dB
   * When the preset button is at PRESET position, AFT is turned off.
   * When the preset button is set at NORMAL position, AFT is turned on.

5. Press the preset key to adjust the voltage of the DC power supply until there is no beating in the oscilloscope's waveform.
6. Set the preset button at NORMAL position.
7. Adjust T205 so that no beating is caused at the output waveform.


Finely adjust to make zero the beating



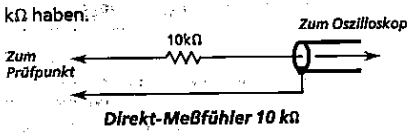
# PIF/AFT/AGC-EINSTELLUNG (Fortsetzung)

| Einstellbedingungen | Einstellverfahren |
|---|---|

## 2. P-Detector-Einstellung

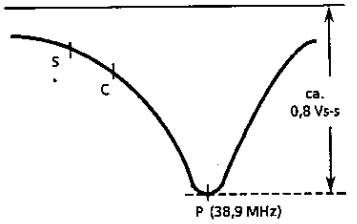
Einstellpunkt
☐ T205: P-Detector-spule

1. Den Kippgenerator-Ausgang mit TP203 verbinden (Stift (46) von IC801).
   - Benutzter Meßfühler:
     75Ω Gleichspannungs-Meßfühler
   - Kippegelausgang: 90 dB
2. PIF AGC:
   4,0 V Gleichspannung dem TP202 zuführen (Stoft (48) von IC801).
3. Das AFT-System dämpfen. (Die Vorwahltaste auf die Suchbetriebsart einstellen).
4. Die Eingangsleitung mit TP204 verbinden.
   Die verwendete Eingangsleitung muß einen Direkt-Meßfühler mit einem Widerstand von 10 kΩ haben.



*Direkt-Meßfühler 10 kΩ*

1. T205 so einstellen, daß das 38,9-MHz-Signal den max. Pegel erreicht (± 50 kHz).




* Die PIF AGC Spannung so einstellen, daß die Ausgangswellenform ca. 0,8 Vs-s beträgt.

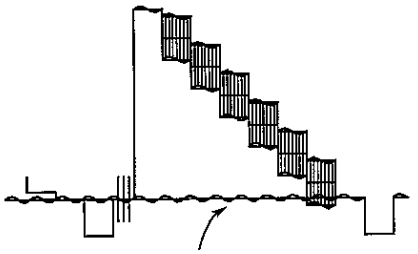
## 3. AFT-Einstellung

**Feineinstellung**

Einstellpunkt
☐ T205: AFT-spule

1. Empfang des Kanal-E12-Signals ("PAL-FARBBALKEN"-Signal).
   Wenn das Kanal-E12-Signal nicht vorliegt, reicht der Empfang von mehr als Kanal E5 bzw. das UHF-Signal aus.
   - Signalstärke: über 55dB, unter 80dB
2. Die Vorspannungseihneit an $V_T$ des Tuners anschließen (ungefähr 11V zuführen) und das Kanal-E12-Signal empfangen.
3. Das Oszilloskop an TP205 anschließen.
   - Oszilloskop-Meßbereich: 0,5 V/Teilung
   - Durchlaufzeit: 20 μsec/Teilung
   - Synchronisierung: horiz. Synchron.
4. Den Ausgang des SSG (Standard-Signal-Generator) an den Tuner-ZF-Ausgangsanschluß entlang des Kondensators von 1 pF messen.
   - SS-Ausgang:
     38,9 MHz ± 5 kHz (nicht moduliert)
   - SSG-Ausgangspegel: ca. 85 dB
   * Wenn die Festsendertaste auf PST steht, ist die AFT-Funktion ausgeschaltet.
   * Wenn die Festsendertaste auf NOR steht, ist die AFT-Funktion aktiviert.

5. Die Vorwahltaste drücken und die Spannung der Vorspannungseihneit so einstellen, daß an der Ausgangswellenform auf dem Bildschirm des Oszilloskops keine Schwingung entsteht.
6. Die Festsendertaste auf NORMAL stellen.
7. T205 so einstellen, daß an der Ausgangswellenform keine Schwingung entsteht.


Die Wellenform schließlich so einstellen, daß die Schwingung Null beträgt.

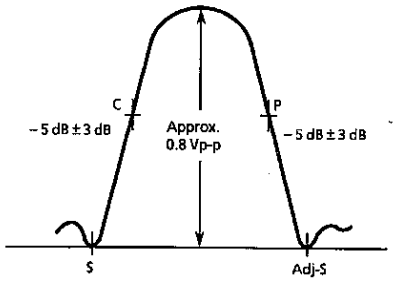
# PIF/AFT/AGC ADJUSTMENT (Continued)

| Adjusting Conditions | Adjusting Procedures |
|---|---|

## 4. PIF Overall Adjustment

1. Receive "SECAM COLOR BAR (channel E-10)" signal.
   If channel-E10 signal is not available, set $V_T$ voltage at 10V in $V_H$ band.
2. Connect sweep generator's output to the test point of tuner.
   - Probe in use: 75Ω DC cut probe
   - Sweep output level: 90 dB
3. Connect response lead to TP204.
   The response lead in use should be a direct probe with a resistor of 10 kΩ included.
4. RF-AGC:
   Apply approx. 4.0V DC to the tuner AGC terminal.
5. PIF AGC:
   Apply approx. 4.0V DC to TP202.
6. Connect a 120 Ω damping resistor in parallel to R215, short C243 and C244.
7. Turn off AFT.

1. Adjust IF AGC voltage so that the output waveform is of approx. 0.8Vp-p.
2. Check that the overall waveform is as shown in Figure below.

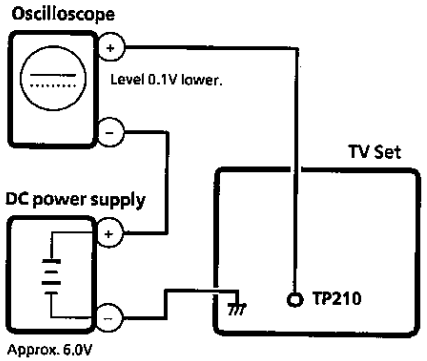



## 5. RF-AGC Cut-In Adjustment

Adjusting Point
☐ **R248: RF-AGC control**

1. Keep the AGC Cut-in control near the center position.
2. Receive "PAL COLOUR BAR (channel E-12)" signal.
   - Signal strength:
     57dB ± 1 dB (with 50Ω open)
3. Connect the oscilloscope to the tuner's AGC terminal (TP210).
   - Range: DC range
   - Voltage: 10mV/div.
   - Sweep: 10msec./div.
   * Set the DC power supply to about 6.0V and turn up the oscilloscope range to 10mV (DC).

1. Turn R248 to obtain the highest voltage.
2. Turn R248 slowly in the opposite direction until the voltage drops 0.1V lower than the highest level.
3. Change the antenna input signal to 65dB ± 2dB and make sure there is no noise. Turn up the input signal to 90 — 95dB to be sure that there is no cros-modulation beat.





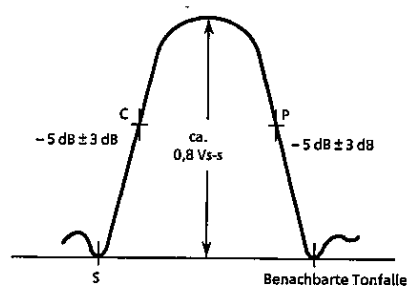

# PIF/AFT/AGC-EINSTELLUNG (Fortsetzung)

| Einstellbedingungen | Einstellverfahren |
|---|---|

## 4. PIF-GESAMTEINSTELLUNG

1. Empfang des "SECAM-FARBBALKEN (Kanal-E10)"-Signal.
   Wenn das Kanal-E10-Signal nicht vorliegt, die $V_T$-Spannung im $V_H$-Band auf 10V einstellen.
2. Den Ausgang des Kippgenerators mit dem Prüfpunkt des Tuners verbinden.
   - Benutzter Meßfühler:
     75Ω Gleichspannungs-Meßfühler
   - Kippegelausgang: 90 dB
3. Die Ansprechleitung an TP204 anschließen.
   Die verwendete Eingangsleitung muß einen Direkt-Meßfühler mit einem Widerstand von 10 kΩ haben.
4. HF-AGC:
   Ca. 4,0 V Gleichspannung dem Tuner-AGC-Anschluß zuführen.
5. PIF AGC:
   Ca. 4,0 V Gleichspannung dem TP202 zuführen.
6. Eine 120-Ω-Dämpfungswiderstand parallel zum R215 anschließen und C243 und C244 kurzschließen.
7. Die AFT-Funktion ausschalten.

1. Die ZF-AGC-Spannung so einstellen, daß die Wellenform ca. 0,8 Vs-s beträgt.
2. Sicherstellen, daß die Gesamtwellenform wie in nachfolgender Abbildung aussieht.

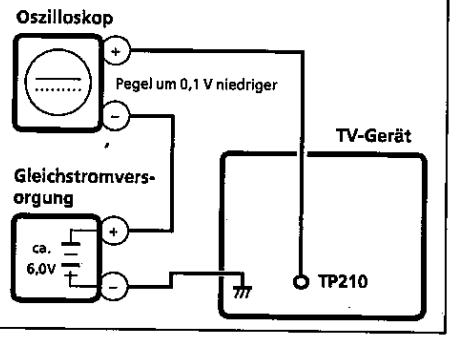



## 5. RF-AGC -EINSCHALTEINSTELLUNG

Einstellpunkt
☐ **R248: HF-AGC-Regler**

1. Den AGC-Regler nahe der Mittelposition positionieren.
2. Empfang des "PAL-FARBBALKEN (Kanal-E10)"-Signal.
   - Signalstärke:
     57dB ± 1 dB (mit 50Ω offen)
3. Das Oszilloskop an den AGC-Anschluß (TP210) des Tuners anschließen.
   - Meßbereich: Gleichspannungsbereich
   - Spannung: 10mV/Teilung
   - Durchlaufzeit: 10msec/Teilung
   * Die Gleichstromversorgung auf ca. 6,0 V einstellen und den Synchroskopbereich auf 10 mV (Gleichspannung) aufdrehen.

1. R248 so einstellen, daß die höchste Spannung erzielt wird.
2. R248 langsam in die Gegenrichtung drehen, bis die Spannung um 0,1 V unter den höchsten Spannungswert abfällt.
3. Das Antennen-Eingangssignal auf 65 dB ± 2dB einstellen und sicherstellen, daß kein Bildrauschen auftritt. Das Eingangssignal auf 90-95 dB aufdrehen und sicherstellen, daß keine Kreuzmodulations-Schwingung vorliegt.



## 115V LINE ADJUSTMENT

| Adjusting Conditions | Adjusting Procedures |
|---|---|
| Adjusting Point<br>☐ R711: 115V Adjustment Control<br>1. Set the R711 to 5/10 before supplying power.<br>2. Receive "MONOSCOPE PATTERN (channel E-5)" signal.<br>3. Set Contrast and Brightness controls at MAX position.<br>4. Connect DC milliammeter to TP602 and TP603.<br>5. Using the DC milliammeter, check to see that the beam current is between 700 and 950 μA.<br>**Note:**<br>**In other cases than the above, abjust the sub-contrast control (R420)**<br>6. Connect Digital voltmeter to TP701. | 1. Adjust the R711 until the TP701's voltage becomes 115 ± 0.5 V. |

## 115V -LEITUNGSEINSTELLUNG

| Einstellbedingungen | Einstellverfahren |
|---|---|
| Einstellpunkt<br>☐ R711: 115V Einstellregler<br>1. R711 vor dem Einschalten auf 5/10 einstellen.<br>2. Das "MONOSKOPMUSTER"-Signal empfangen.<br>3. Die Kontrast-und Helligkeitsregler auf max. Einstellposition bringen.<br>4. Ein Gleichstrom-Milliamperemeter an TP602 und TP603 anschlfeßen.<br>5. Mit dem Gleichstrom-Milliamperemeter sicherstellen,daß der Strahoenstrom zwischen 700 μA und 950 μA beträgt.<br>**Hinweis:**<br>**Wenn der Wert außerhalb des Soliwerts liegt,den Hilfskontrastregler (R420) erneut einstellen.**<br>6. Das Digitalvoltmeter an TP701 anschließen. | 1. R711 so einstellen, daß die Spannung an TP701 115 ± 0.5 V beträgt. |

## VIDEO CHROMA ADJUSTMENT

| Adjusting Conditions | Adjusting Procedures |
|---|---|

### 1. CRT Cut-off Adjustment

| | |
|---|---|
| Adjusting Point<br>☐ R853: Red Bias control<br>☐ R859: Green Bias control<br>☐ R865: Blue Bias control<br>☐ T602: Screen control (a part of T602)<br>☐ R857: Green Drive control<br>☐ R863: Blue Driv control<br>***Note: Prior to this adjustment, warm up the unit with the beam current of more than 600 μA for more than 30 minutes.***<br>1. Receive "MONOSCOPE PATTERN (E-5CH)" signal.<br>2. Push the "P-N" key on the remote controller to make the picture normal.<br>3. Set Red bias control at MIN position.<br>Set Green bias control at MIN position.<br>Set Blue bias control at MIN position.<br>Set Green drive control at CENTER position.<br>Set Blue drive control at CENTER position.<br>Set the Screen control at MIN position.<br>4. Set the unit at AV mode (no Signal condition) with the remote controller.<br>5. Short TP501 and TP502. | 1. Slowly turn the Screen control clockwise until the horizontal raster appears slightly, and stop it.<br>2. Here, one of the three colours (red, blue, green) appears first as the Screen control is turned. So, touching off the Bias control belonging to the first colour, use and move the other two controls so that the horizontal raster becomes white.<br>3. Turn the Screen control counterclockwise until the horizontal raster disappears, and stop it. |

## VIDEO/FARBTON-EINSTELLUNG

| Einstellbedingungen | Einstellverfahren |
|---|---|

### 1. Einstellung der Bildröhre

| | |
|---|---|
| Einstellpunkt<br>☐ R853: Rot-Vorspannungsregler<br>☐ R859: Grün-Vorspannungsregler<br>☐ R865: Blau-Vorspannungsregler<br>☐ T602: Bildschirmregler (Teil von T602)<br>☐ R857: Grün-Treiberregler<br>☐ R863: Blau-Treiberregler<br>***Hinweis:***<br>***Vor der Einstellung muß das Gerät mit dem Strahlenstrom von über 600 μA für mehr als 30 Minuten vorgewärmt werden.***<br>1. Das "MONOSKOPMUSTER"-Signal empfangen.<br>2. Die "P-N"-Taste an der Fernbedienung drücken, um ein normales Bild zu erhalten.<br>3. Den Rot-Vorspannungsregler in die MIN-Position bringen.<br>Den Grün-Vorspannungsregler in die MIN-Position bringen.<br>Den Blau-Vorspannungsregler in die MIN-Position bringen.<br>Den Grün-Treiberregler in die CENTER-Position bringen.<br>Den Blau-Treiberregler in die CENTER-Position bringen.<br>Den Bildschirmregler in die MIN-Position bringen.<br>4. Das Gerät mit der Fernbedienungseinheit auf AV-Betrieb schalten (signolloser Zustand).<br>5. TP501 und TP502 kurzschließen. | 1. Den Bildschirmregler langsam im Uhrzeigersinn drehen, bis der Horizontalraster schwach erscheint.<br>2. Eine der drei Farben (rot, blau, grün) erscheint beim Drehen des Bildschirmreglers zuerst auf dem Schirm.<br>Nun den Vorspannungsregler für die erste Farbe verstellen und ebenfalls die beiden anderen Vorspannungsregler, bis der Horizontalraster weiß wird.<br>3. Den Bildschirmregler langsam im Gegenuhrzeigersinn drehen, bis der Horizontalraster verschwindet. |

## VIDEO/CHROMA ADJUSTMENT (Continued)

| Adjusting Conditions | Adjusting Procedures |
|---|---|

### 2. White Balance and Back Ground Adjustment

Adjusting Point
- ☐ **R857: Green Drive control**
- ☐ **R863: Blue Drive control**
- ☐ **R420: Sub-Contrast control**

***Note: Prior to this adjustment, warm up the unit with the beam current of more than 600μA for more than 30 minutes.***

1. Receive "MONOSCOPE PATTERN (Channel E5)" signal.
2. Set the Contrast and Brightness controls at MAX position.
3. Connect DC milliammeter to TP603⊕ and TP602⊖. (Full scale: 3 mA)

1. Adjust Sub-Contrast control so that the beam current becomes 950 μA (rough adjustment)
2. Adjust Green Drive control and Blue Drive control so that the colour temperature is at 7500°K. (High beam: 950 μA).
3. Adjust the Contrast control and Brightness control so that the beam current is approx. 200μA, and check that the colour temperature is at 7500°K. If the temperature is not at 7500°K, go back to **"CRT CUT-OFF ADJUSTMENT"** and repeat the adjustment.

### 3. Sub-Contrast Adjustment

Adjusting Point
- ☐ **R420: Sub-Contrast control**

***Note: Prior to this adjustment, warm up the unit with the beam current of more than 600μA for more than 30 minutes.***

1. Receive "MONOSCOPE PATTERN (Channel E5)" signal.
2. Set the Contrast and Brightness controls at MAX position.
3. Connect DC milliammeter to TP603⊕ and TP602⊖. (Full scale : 3 mA)

1. Adjust Sub-Contrast control so that the beam current becomes 950 μA.

## DEFLECTION LOOP ADJUSTMENT

| Adjusting Conditions | Adjusting Procedures |
|---|---|

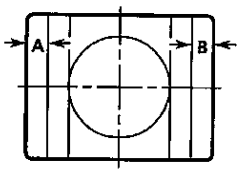
### 1. Horizontal Centering Adjustment

Adjusting Point
- ☐ **R613: Horizontal Centering control**

***Note: This adjustment should be performed after the purity and convergence adjustments.***

1. Receive "MONOSCOPE PATTERN (Channel E5)" signal.

1. Adjust R613 so that the horizontal center of picture is at the position which gives the relation of A = B.




### 2. Vertical Size Adjustment

Adjusting Point
- ☐ **R509: Vertical Size control**

1. Receive "MONOSCOPE PATTERN (Channel E5)" signal.
2. Set the Brightness and Contrast controls at MAX position.

1. Adjust R509 so that the vertical size of picture is at the best point.
   - Vertical size: 8% TYP (Max. 10%)



## VIDEO/FARBTON-EINSTELLUNG (Fortsetzung)

| Einstellbedingungen | Einstellverfahren |
|---|---|

### 2. Einstellung der Weißbegrenzung und des Hintergrundes

Einstellpunkt
- ☐ **R857: Grün-Treiberregler**
- ☐ **R863: Blau-Treiberregler**
- ☐ **R420: Hilfskontrastregler**

**Hinweis: Vor der Einstellung muß das Gerät mit dem Strahlenstrom von über 600 μA für mehr als 30 Minuten vorgewärmt werden.**

1. Das "MONOSKOPMUSTER (Kanal-E5)"-Signal empfangen.
2. Die Helligkeits-und Kontrastregler auf max. Einstellposition bringen.
3. Ein Amperemeter an TP603 ⊕ und TP602 ⊖ anschließen. (ganze Skala: 3 mA)

1. Den Hilfskontrastregler so einstellen, daß der Strahlenstrom 950 μA aufweist (Grobeinstellung).
2. Den Grün-Treiberregler und den Blau-Treiberregler so einstellen, daß die Farbtemperatur bei 7500°K liegt (Strahl: 950 μA).
3. Den Kontrastregler sowie den Helligkeitsregler so einstellen, daß der Strahlenstrom ca. 200 μA aufweist und überprüfen, ob die Farbtemperatur 7500°K beträgt. Sollte die Farbtemperatur keine 7500°K aufweisen, zum Abschnitt **"Einstellung der Bildröhre"** zurückgehen und die Einstellung erneut wiederholen.

### 3. Einstellung des Hilfskontrastes

Einstellpunkt
- ☐ **R420: Hilfskontrastregler**

**Hinweis: Vor der Einstellung muß das Gerät mit dem Strahlenstrom von über 600 μA für mehr als 30 Minuten vorgewärmt werden.**

1. Das "MONOSKOPMUSTER (Kanal-E5)"-Signal empfangen.
2. Die Helligkeits-und Kontrastregler auf max. Einstellposition bringen.
3. Ein Amperemeter an TP603 ⊕ und TP602 ⊖ anschließen. (ganze Skala: 3 mA)

1. Den Hilfskontrastregler so einstellen, daß der Strahlenstrom 950 μA aufweist.

## EINSTELLUNG DER ABLENKSCHLEIFE

| Einstellbedingungen | Einstellverfahren |
|---|---|

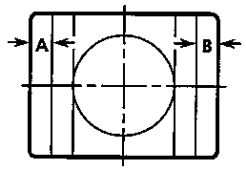
### 1. Einstillung der horizontalen Bildlage

Einstellpunkt
- ☐ **R613: Regler für Horizontale Bildlage**

**Hinweis: Diese Einstellung muß nach den Farbreinheits-und Konvergenzeinstellungen durchgeführt werden.**

1. Das "MONOSKOPMUSTER (Kanal-E5)"-Signal empfangen.

1. R613 so einstellen, daß sich die horizontale Bildlage in der Position befindet, die das Verhältnis A = B ergibt.




### 2. Einstillung der Vertikalgröße

Einstellpunkt
- ☐ **R509: Regler für Vertikalgröße**

1. Das "MONOSKOPMUSTER (Kanal-E5)"-Signal empfangen.
2. Die Helligkeits-und Kontrastregler auf max. Einstellposition bringen.

1. R509 so einstellen, daß die Vertikalgröße nabtastung gleich wie bei der Horizontalgröße ist.
   - Verticalabtastung: 8% TYP (min. 6%, max. 10%)

## DEFLECTION LOOP ADJUSTMENT (Continued)

| Adjusting Conditions | Adjusting Procedures |
|---|---|

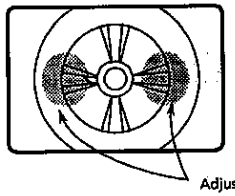
### 3. Vertical Linearity Adjustment

| | |
|---|---|
| Adjusting Point<br>☐ R514: Vertical Linearity control<br>1. Receive "MONOSCOPE PATTERN (Channel E5)" signal. | 1. Adjust R514 so that the vertical linearity of picture is at the best point. |

### 4. Vertical Center Adjustment

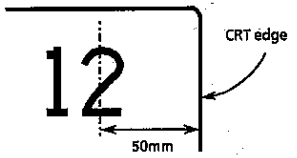
| | |
|---|---|
| Adjusting Point<br>☐ S501: Vertical Center Adjust switch<br>*Note: This adjustment should be performed after the purity and convergence adjustments.*<br>1. Receive "MONOSCOPE PATTERN (Channel E5)" signal. | 1. Adjust S501 so that the vertical center of picture is at the best point. |

## FOCUS ADJUSTMENT

| Adjusting Conditions | Adjusting Procedures |
|---|---|
| Adjusting Point<br>☐ T602: Focus control (a part of T602)<br>1. Receive "MONOSCOPE PATTERN (E-5CH)" signal.<br>2. Set Contrast control at NORMAL position.<br>3. Set Brightness control at MAX position (with 950 μA of beam current).<br>(Instead of monoscope pattern signal, it is allowed to use white pattern signal of 88% modulation.) | 1. Adjust Focus control to have best focus at the central area of CRT.<br>  <br> |

## CRT DISPLAY ADJUSTMENT

### 1. Sign Position Adjustment

| Adjusting Conditions | Adjusting Procedures |
|---|---|
| Adjusting Point<br>☐ T1001: Sign Position control<br>1. Turn the channel call on (on the remote controller). | 1. Adjust T1001 so that the center of the first-digit figure of the channel number be about 50 mm from the right edge of the CRT.<br>  <br> |



## EINSTELLUNG DER ABLENKSCHLEIFE (Fortsetzung)

| Einstellbedingungen | Einstellverfahren |
|---|---|

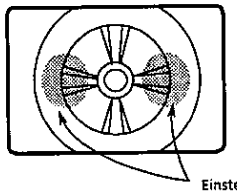
### 2. Einstellung der Vertikallinearität

| | |
|---|---|
| Einstellpunkt<br>☐ R514: Regler für Vertikallinearität<br>1. Das "MONOSKOPMUSTER (kanal-E5)"-Signal empfangen. | 1. R514 so einstellen, daß sich die beste Vertikallinearität ergibt. |

### 3. Einstellung der Vertikalmitte

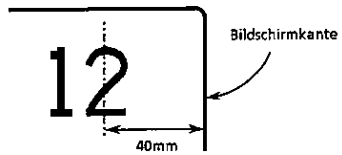
| | |
|---|---|
| Einstellpunkt<br>☐ S501: Regler für Vertikalmitte<br>**Hinweis: Diese Einstellung muß nach der Reinheits- und Konvergenzeinstellung durchgeführt werden.**<br>1. Das "MONOSKOPMUSTER (kanal-E5)"-Signal empfangen. | 1. S501 so einstellen, daß sich das Schirmbild in der Vertikalmitte befindet. |

## SCHARFEINSTELLUNG

| Einstellbedingungen | Einstellverfahren |
|---|---|
| Einstellpunkt<br>☐ T602: Scharfeinstellregler (ein Teil von TP602)<br>1. Das "MONOSKOPMUSTER (kanal-E5)"-Signal empfangen.<br>2. Den Kontrastregler in die NORMAL-Position bringen.<br>3. Den Helligkeitsregler in die MAX-Position bringen (mit 950 μA Strahlenstrom).<br>(Anstatt eines Monoskopmuster-Signals kann auch ein Weißmuster-Signal mit 88% Modulation verwendet werden.) | 1. Den Scharfeinstellregler so einstellen, daß in der Mitte des Bildschirms der schärfste Punkt erzielt wird.<br>  <br> |

## EINSTELLUNG DER BILDSCHIRMANZEIGE

### 1. Position des Bildschirmsymbols

| Einstellbedingungen | Einstellverfahren |
|---|---|
| Einstellpunkt<br>☐ T1001: Bildschirmsymbolregler<br>1. Den Kanalabruf aktivieren (auf der Fernbedienung) | 1. T1001 so einstellen, daß sich die Mitte der ersten ziffer der Kanalnummer ca. 40 mm von der rechten Bildschirmkante befindet.<br>  <br> |

# PURITY ADJUSTMENT

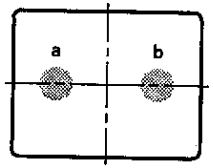
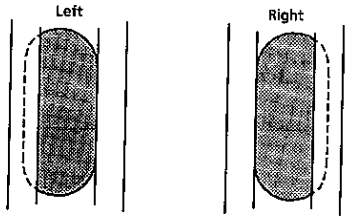
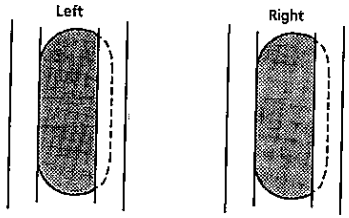



*Figure A.*



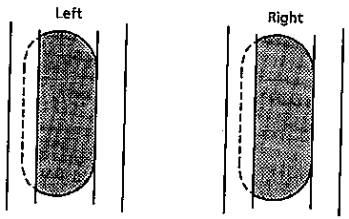

The beam landing is shifted outwards.

*Figure B.*




The beam landing is shifted to right.

*Figure C.*




The beam landing is shifted to left.

*Figure D.*

**Adjusting Conditions**

1. Prior to the purity adjustment, warm up the unit with beam current of more than 600 $\mu$A, for more than 30 minutes.
2. Receive the green signal alone and adjust the beam current to approx. 600 $\mu$A.
3. Fully degauss the CRT with the degaussing coil.
4. Before the purity adjustment, it is needed to roughly adjust the static convergence.
5. Set the purity magnet at the position which gives zero (0) magnetic field.

**Adjusting Procedures**

**Adjustment:**

**During the adjustment, keep the unit facing the east.**

1. Observe the green spots ("a" and "b") with a microscope as shown in ***Fig. A***, and adjust the purity magnet so that they are at the specified landing position.
2. If the right and left green spots are both deviated outwards from their landing positions as shown in ***Fig. B***, push the deflection yoke forwards until their positions are corrected.
3. If the beam landing is shifted to right or left as shown in ***Figs. C*** and ***D***, adjust the opening degree of the purity magnet so that the beam landing is correctly positioned.
4. Adjust the purity magnet so that the beam landing is correct at either of the central part, right and left parts of screen, then check that the green beams at four corners of screen are all correctly positioned.
   Finally, check that the beam landing at any pat of screen is satisfactory with the Rank "B" specifications.
5. If the green beam is positioned to mix with the other colour, pull the deflection yoke backward.
   - Outside of the specified landing:
     To front of the deflection yoke.
   - Inside of the specified landing:
     To back of the deflection yoke.
6. Set the raster rotation at "0" position (with the unit facing the east).
7. Tighten the screws of the deflection coil.
   Tightening torque: 11 kg ± 2 kg.



# EINSTELLUNG DER FARBREINHEIT

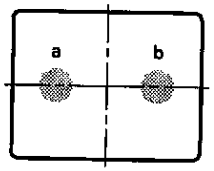
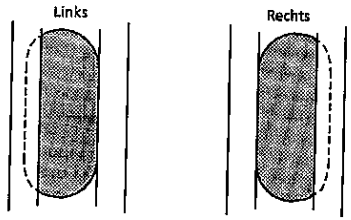
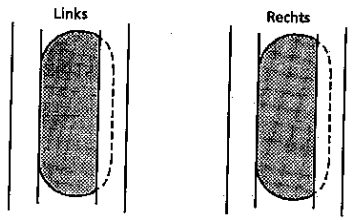



*Abbildung A.*



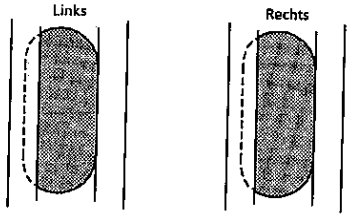

Der Stahlenaufprallpunkt ist nach außen verschoben.

*Abbildung B.*




Der Stahlenaufprallpunkt ist nach rechts verschoben.

*Abbildung C.*




Der Stahlenaufprallpunkt ist nach links verschoben.

*Abbildung D.*

**Einstellbedingungen**

1. Vor der Farbreinheitseinstellung muß das Gerät mit dem Strahlenstrom von über 600 $\mu$A für mehr als 30 Minuten vorgewärmt werden.
2. Nur das Grün-Signal empfangen und den Strahlenstrom auf ca. 600 $\mu$A einstellen.
3. Den Bildschirm mit der Entmagnetisierungsspule vollkommen entmagnetisieren.
4. Vor der Farbreinheitseinstellung muß die statische Konvergenz grob eingestellt werden.
5. Den Reinheitsmagneten in die Position bringen, die eine magnetische Feldstärke von Null ergibt.

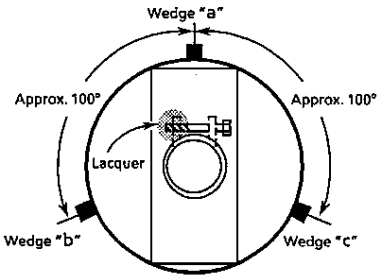
**Einstellverfahren**

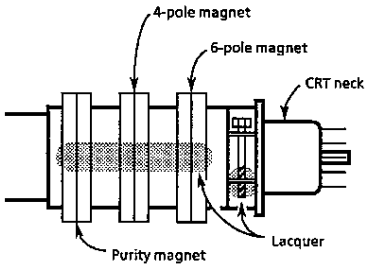
**Einstellung:**

**Während der Einstellung muß daß Gerät in östliche Richtung gedreht werden.**

1. Die grünen Flecken ("a" und "b") mit einem Vergrößerungsglas (siehe ***Abb. A***) betrachten und den Farbreinheitsmagneten so einstellen, daß sich die Flecken in der festgelegten Aufprallposition befinden.
2. Wenn die rechten und linken grünen Flecken von ihrer Aufprallposition nach außen abweichen (siehe ***Abb. B***), das Ablenkjoch nach vorne drücken, bis ihre Positionen korrigiert sind.
3. Wenn der Strahlenaufprall nach rechts oder links verschoben wird (siehe ***Abbildungen. C*** und ***D***), den Öffnungswinkel des Farbreinheitsmagneten so einstellen, daß der Strahlenaufprall korrekt positioniert ist.
4. Den Farbreinheitsmagneten so einstellen, daß der Strahlenaufprall in der Mitte sowie am rechten bzw. linken Bildschirmrand korrekt ist. Danach überprüfen, ob die grünen Strahlen an den vier Ecken des Bildschirms richtig positioniert sind. Schließlich ist noch sicherzustellen, ob der Strahlenaufprall an jeder Stelle des Bildschirms gemäß den Spezifikationen von "Rang B" entspricht.
5. Wenn der grüne Strahl so positioniert ist, daß er sich mit einer anderen Farbe mischt, muß das Ablenkjoch nach hinten gezogen werden.
   - Außerhalb des festgelegten Aufprallpunkts:
     Das Ablenkjoch nach vorne drücken.
   - Innerhalb des festgelegten Aufprallpunkts:
     Das Ablenkjoch nach hinten drücken.
6. Die Rasterrotation auf "0" einstellen. (Das Gerät muß dabei nach Osten ausgerichtet sein.)
7. Die Schrauben der Ablenkspule festziehen.
   Anzugsmoment: 11 kg ± 2 kg.

# CONVERGENCE ADJUSTMENT



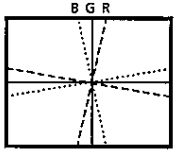




*Figure a.*

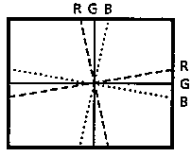



*Figure b.*

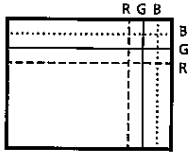



*Figure c.*

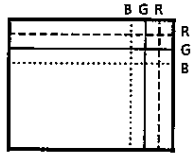



*Figure d.*

**Adjusting Conditions**

**This adjustment should be performed after the purity magnet adjustment.**

1. Receive "CROSSHATCH PATTERN (Channel E2)" signal.
2. Set the Brightness control and Contrast control at MAX position.

**Adjusting Procedures**

## STATIC CONVERGENCE

1. Adjust the opening degree of the 4-pole magnet and rotate the magnet to converge red and blue lines.
2. Adjust the opening degree of the 6-pole magnet and rotate the magnet to converge red, blue and green lines.

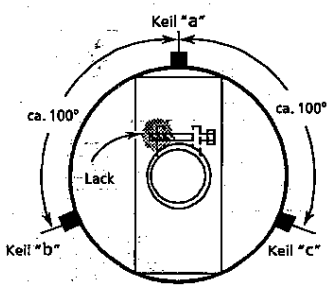
## DYNAMIC CONVERGENCE

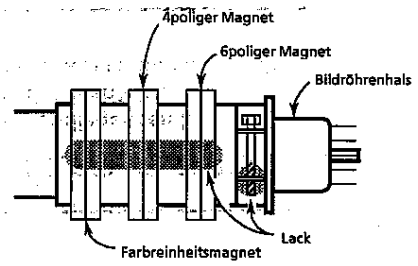
3. Dynamic convergence (convergence of the three colour fields) at the edges of CRT screen is accomplished in the following manner.
   - **Convergence in *Fig. a* :**
     Insert wedge"a" between the deflection yoke and CRT, and tilt the deflection yoke upward until the mis-convergence shown in ***Fig. a*** is corrected.
   - **Convergence in *Fig. b* :**
     Insert wedges "b" and "c" between the deflection yoke and CRT, and tilt the deflection yoke until the mis-convergence shown in ***Fig. b*** is corrected.
   - **Convergence in *Fig. c* :**
     Insert wedge "c" deeply between the deflection yoke and CRT, and tilt the deflection yoke to right until the mis-convergence shown in ***Fig. c*** is corrected.
   - **Convergence in *Fig. d* :**
     Insert wedge "b" deeply between the deflection yoke and CRT, and tilt the deflection yoke to left until the mis-convergence shown in ***Fig. d*** is corrected.
4. Stick the three wedges onto the CRT, and apply glass tapes thereon.
5. Apply lacquer to the deflection yoke screw, magnet unit (made of purity, 4-pole and 6-pole magnets) and magnet unit screw.

**After the adjustment, receive either the Red or the Blue signal and check that there is no mixture with the other colour signal.**



# KONVERGENZ-EINSTELLUNG



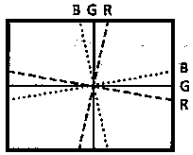




*Abbildung a.*

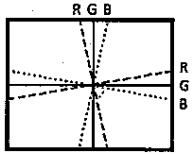



*Abbildung b.*

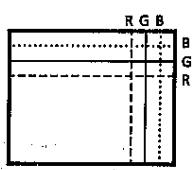



*Abbildung c.*

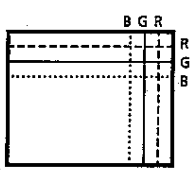



*Abbildung d.*

**Einstellbedingungen**

**Diese Einstellung darf erst nach der Einstellung des Farbreinheitsmagneten durchgeführt werden.**

1. Das "KREUZMUSTER (Kanal-E2)"-Signal empfangen.
2. Die Helligkeits-und Kontrastregler in die MAX-Einstellposition bringen.

**Einstellverfahren**

## STATISCHE KONVERGENZ

1. Den Öffnungswinkel des 4poligen Magneten einstellen und den Magneten rotieren, um die roten und blauen Zeilen zu konvergieren.
2. Den Öffnungswinkel des 6poligen Magneten einstellen und den Magneten rotieren, um die roten, blauen und grünen Zeilen zu konvergieren.

## DYNAMISCHE KONVERGENZ

3. Die dynamische Konvergenz (Konvergenz der drei Farbfelder) an den Kanten des Bildschirms wird wie folgt erzielt:
   - **Konvergenz in *Abb. a* :**
     Den Keil "a" zwischen Ablenkjoch und Bildschirm einschieben, dann das Ablenkjoch nach oben Kippen, bis die in ***Abb. a*** gezeigte Fehlkonvergenz korrigiert ist.
   - **Konvergenz in *Abb. b* :**
     Die Keile "b" und "c" zwischen Ablenkjoch und Bildschirm einschieben, dann das Ablenkjoch kippen, bis die in ***Abb. b*** gezeigte Fehlkonvergenz korrigiert ist.
   - **Konvergenz in *Abb. c* :**
     Den Keil "c" tief zwischen Ablenkjoch und Bildschirm einschieben, dann das Ablenkjoch nach rechts kippen, bis die in ***Abb. c*** gezeigte Fehlkonvergenz korrigiert ist.
   - **Konvergenz in *Abb. d* :**
     Den Keil "d" tief zwischen Ablenkjoch und Bildschirm einschieben, dann das Ablenkjoch nach links kippen, bis die in ***Abb. d*** gezeigte Fehlkonvergenz korrigiert ist.
4. Die drei Keile am Bildschirm festkleben und mit Glasfolie sichern.
5. Lack auf Ablenkjochschraube, Magneteinheit (bestehend aus 4-und 6poligen Farbreinheitsmagneten) und Magneteinheits-Schraube auftragen.

**Nach der Einstellung entweder das rote oder blaue Signal empfangen und Überprüfen, daß keine Mischung mit einem anderen Farbsignal besteht.**

# PERFORMANCE CHECK

## ■ 21-PIN, TELETEXT

| Adjusting Point | Adjusting Conditions/Procedures |
|---|---|
| 21-pin connector output | 1) Receive "COLOUR BAR (E-12CH)" signal.<br>(The audio modulation of the colour bar signal should be 54%)<br>2) Connect the 21-pin connector checking tool to the TV set.<br>3) Make sure the video output is as specified.<br>(specification: 1Vp-p + 3dB)<br>4) Make sure the audio output is as specified.<br>(specification: 1.4Vp-p + 3dB) |
| 21-pin connector input | 1) Receive "COLOUR BAR (E-12CH)" signal.<br>2) Connect the 21-pin connector checking tool to the TV set.<br>3) Feed the video signal and see if the TV set works properly.<br>4) Feed the audio signal and see if the TV set works properly.<br>5) Feed the data signal and see if the TV set works properly. |
| TV / VIDEO selector switch | 1) Receive "COLOUR BAR (E-12CH)" signal.<br>2) Using the TV / VIDEO selector (on the remote control), make sure the picture disappears and the sound is not heard accordingly. |
| TELETEXT operation | 1) Receive TEXT signal.<br>2) Do the reading, writing, putting in memory and other operations about the text to see if they all function well. |

## ■ TELETEXT

**The basics are the same as for the current Europe-destined models with TEXT function. Note, however, that this model does not have the "Browse" function.**

| Adjusting Point | Adjusting Conditions/Procedures |
|---|---|
| TEXT/MIX | Change between TEXT and MIX modes. |
| HOLD | Make sure that "HOLD" appears at the header and the screen is held. |
| TOP/BOTTOM | Change between TOP ENLARGED, BOTTOM ENLARGED and NORMAL. |



# LEISTUNGSPRÜFUNG

## ■ 21POL, TELETEXT-FUNKTION

| Einstellpunkt | Einstellbedingungen/-verfahren |
|---|---|
| 21pol Ausgang | 1) Signal "COLOR BAR (E-12CH)" empfangen.<br>(Die Audiomodulation des Farbbalkensignals muß 54% betragen.)<br>2) 21pol Steckerprüfer an TV anschließen.<br>3) Korrekten Videosignalausgang feststellen.<br>(Sollwert: 1 Vss + 3dB)<br>4) Korrekten Audiosignalausgang feststellen.<br>(Sollwert: 1.4 Vss + 3dB) |
| 21pol Eingang | 1) Signal "COLOR BAR (E-12CH)" empfangen.<br>2) 21pol Steckerprüfer an Fernseher anschließen.<br>3) Videosignal zuleiten und prüfen, ob TV einwandfrei arbeitet.<br>4) Audiosignal zuleiten und prüfen, ob TV einwandfrei arbeitet.<br>5) Datensignal zuleiten und prüfen, ob TV einwandfrei arbeitet. |
| TV / VIDEO- Wahlschalter | 1) Signal "COLOR BAR (E-12CH)" empfangen.<br>2) Mit dem TV / VIDEO- Wahlschalter der Fernbedienungseinheit feststellen, daß Bild und Ton verschwinden. |
| TELETEXT- Betrieb | 1) TEXT- Signal empfangen.<br>2) Sicherstellen, daß Lesen, Schreiben, Abspeichern und weitere Text-Operationen einwandfrei arbeiten. |

## ■ TELETEXT-FUNKTION

**Die grundlegenden Merkmale sind mit den für Europa bestimmten Modellen mit TEXT-Funktion identisch.**
**Note, however, that this model does not have the "Browse" function.**

| Einstellpunkt | Einstellbedingungen/verfahren |
|---|---|
| TEXT/MISCHEN | Umschalten zwischen den Betriebsarten TEXT/MISCHEN |
| HALT | Sicherstellen, daß die Meldung "HALT" in der oberen Reihe erscheint und die Teletext-Information auf dem Bildschirm festgehalten wird. |
| FORMAT | Wechsel zwischen OBERE HÄLFTE VERGRÖSSERT, UNTERE HÄLFTE VERGRÖSSERT und NORMAL. |

## ■ TELETEXT (Continued)

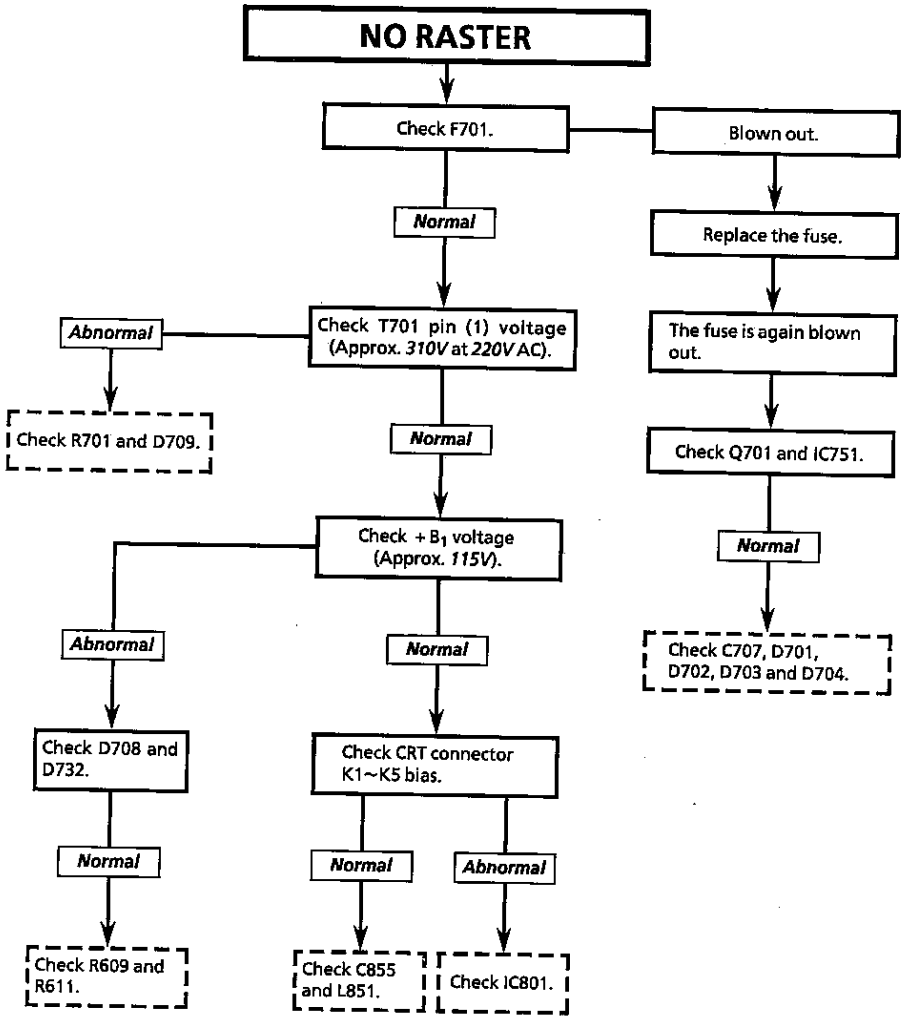
| Adjusting Point | Adjusting Conditions/Procedures |
|---|---|
| PICTURE | The screen will return from TEXT to NORMAL. |
| TIME | Press the TIME key for sub-code instructions. |
| REVEAL | Press the REVEAL key and make sure the hidden characters appear. |
| CANCEL | Receiving the TEXT signal, press the CANCEL key. Make sure the screen returns to NORMAL. Using the numeric keys, bring up the text page number request menu.<br>Capture the request page number, and the selected page number wil appear at the top left on the screen. |
| RESET | Bring back the TV mode.<br>Set the unit to LIST/FLOF-selected mode. |
| RED R | Press the RED key, and the page number menu (boxed in red at the bottom of the screen) will be called up and displayed. |
| GREEN G | Press the GREEN key, and the page number menu (boxed in green at the bottom of the screen) will be called up and displayed. |
| YELLOW Y | Press the YELLOW key, and the page number menu (boxed in yellow at the bottom of the screen) will be called up and displayed. |
| CYAN Cy | Press the CYAN key, and the page number menu (boxed in cyan at the bottom of the screen) will be called up and displayed. |
| INDEX | A menu's page request is made. |



## ■ TELETEXT-FUNKTION (Fortsetzung)

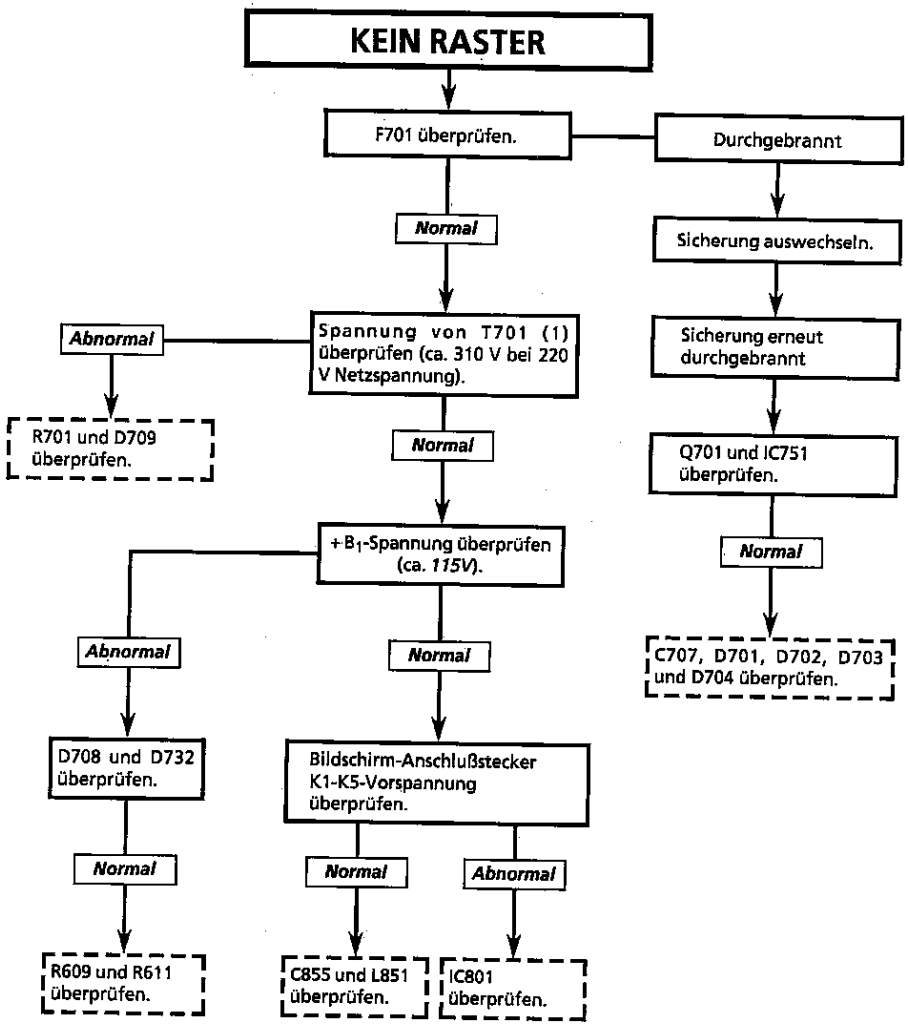
| Einstellpunkt | Einstellbedingungen/verfahren |
|---|---|
| BILD | Umschaltung von der Teletext-Anzeige auf regulären Fernsehempfang. |
| ZEIT | Durch Drücken der TIME-Taste Zeitcode-Anweisungen aufrufen. |
| ERKENNUNG | Die REVEAL-Taste drücken und sicherstellen, daß die versteckten Zeichen auf dem Bildschirm erscheinen. |
| ANULLIEREN | Die CANCEL-Taste beim Empfang eines TEXT-Signals drücken und sicherstellen, daß der Bildschirm auf Normalzustand zurückkehrt. Mit den Zifferntasten das Textseiten-Menü aufrufen.<br>Die gewünschte Seitennummer befehlen, so daß diese oben rechts im Bildschirm erscheint. |
| RÜCKSTELLUNG | Das Gerät wieder auf regulären Fernsehempfang stellen.<br>Nun das Gerät auf LIST/FLOF-Wahlbetrieb stellen. |
| ROT-EINRAHMUNG R | Die R-Täste drücken, um das rot umrahmte Seitennummern-Menü (unten im Bildschirm) abzurufen und anzuzeigen. |
| GRÜN-Einrahmung G | Die G-Taste drücken, um das grün umrahmte Seitennummern-Menü (unten im Bildschirm) abzurufen und anzuzeigen. |
| GELB-Einrahmung Y | Die Y-Taste drücken, um das gelb umrahmte Seitennummern-Menü (unten im Bildschirm) abzurufen und anzuzeigen. |
| CY-Einrahmung Cy | Die CY-Taste drücken, um das cyan umrahmte Seitennummern-Menü (unten im Bildschirm) abzurufen und anzuzeigen. |
| INDEX | Anforderung einer Menüseite. |

# TROUBLE SHOOTING TABLE

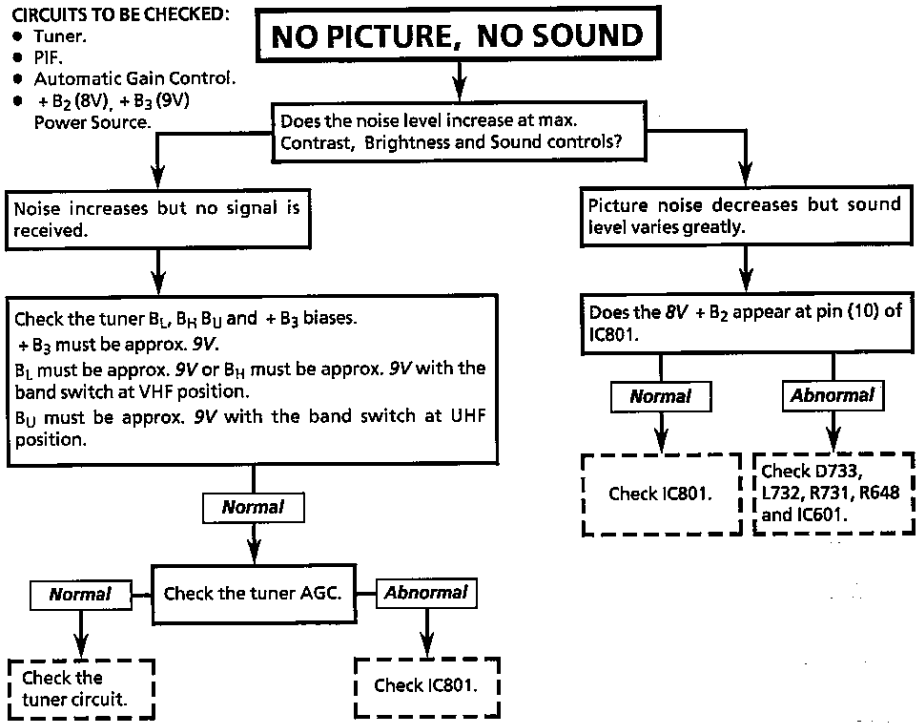


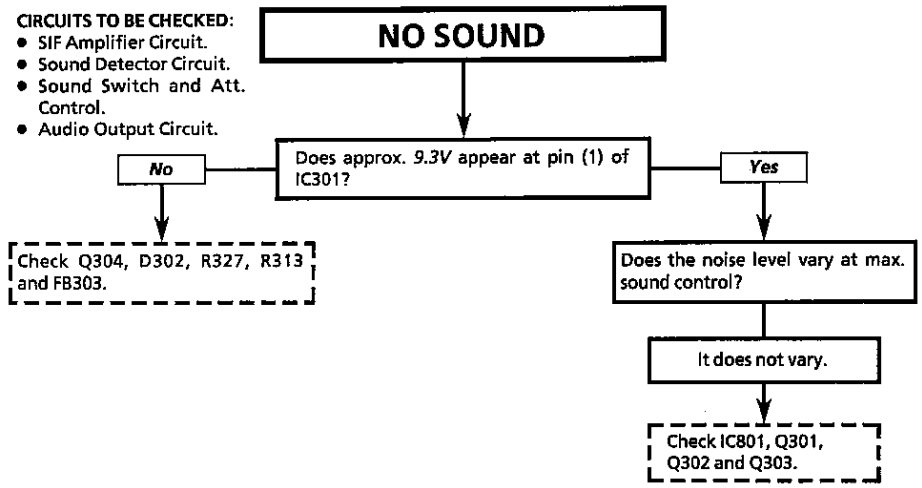

E14

# FEHLERSUCHTABELLE

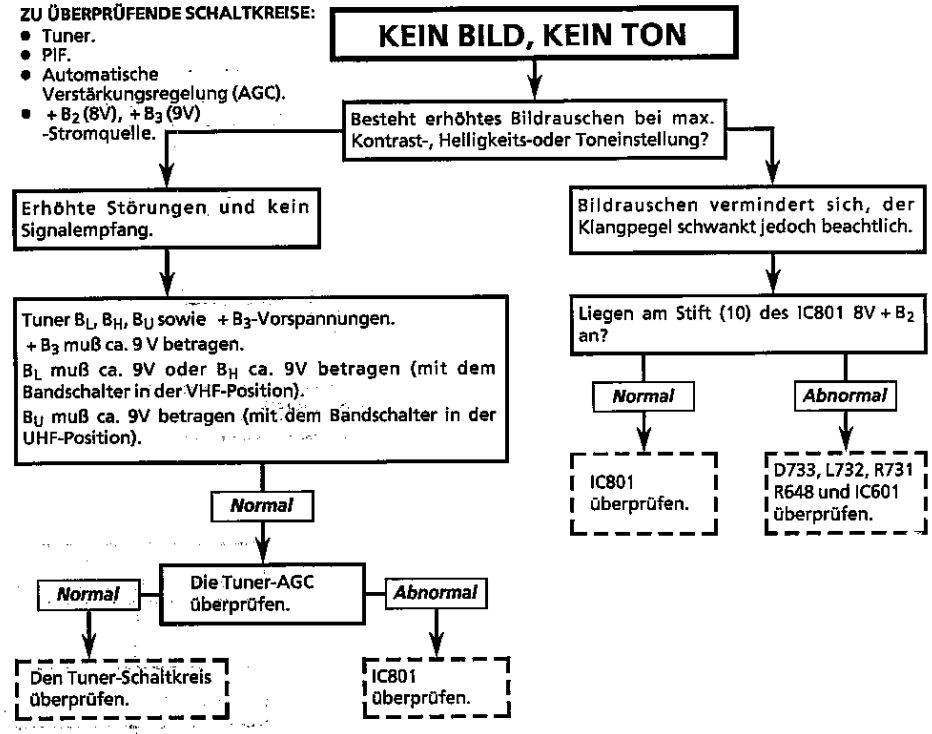


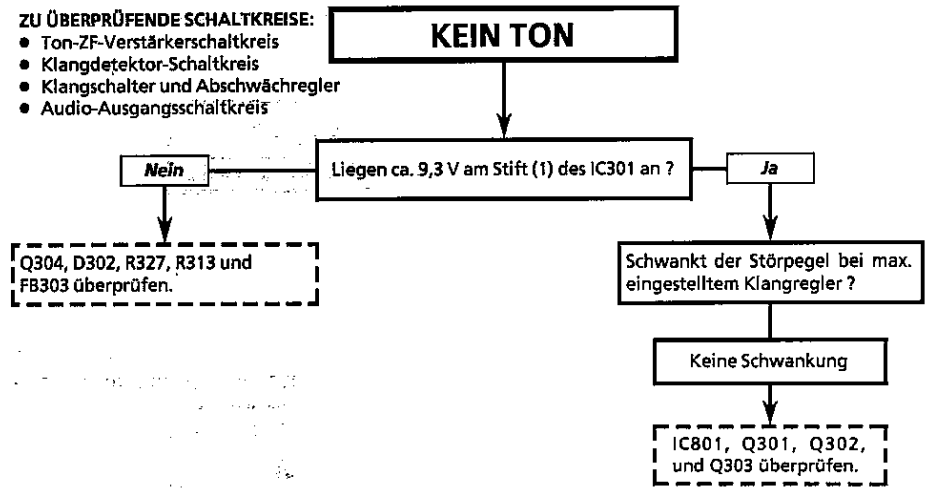

G14


CIRCUITS TO BE CHECKED:
• Tuner.
• PIF.
• Automatic Gain Control.
• + B2 (8V), + B3 (9V) Power Source.
NO PICTURE, NO SOUND
Does the noise level increase at max. Contrast, Brightness and Sound controls?
Noise increases but no signal is received.
Picture noise decreases but sound level varies greatly.
Check the tuner BL, BH BU and + B3 biases.
+ B3 must be approx. 9V.
BL must be approx. 9V or BH must be approx. 9V with the band switch at VHF position.
BU must be approx. 9V with the band switch at UHF position.
Does the 8V + B2 appear at pin (10) of IC801.
Normal
Abnormal
Check IC801.
Check D733, L732, R731, R648 and IC601.
Normal
Check the tuner AGC.
Normal
Abnormal
Check the tuner circuit.
Check IC801.

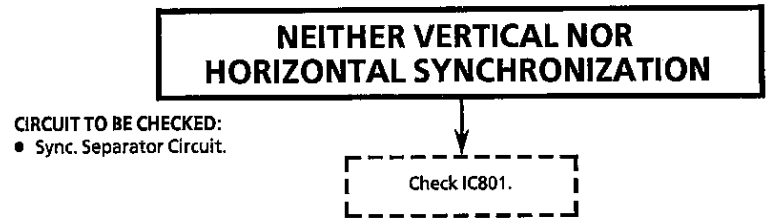

CIRCUITS TO BE CHECKED:
• SIF Amplifier Circuit.
• Sound Detector Circuit.
• Sound Switch and Att. Control.
• Audio Output Circuit.
NO SOUND
Does approx. 9.3V appear at pin (1) of IC301?
No
Yes
Check Q304, D302, R327, R313 and FB303.
Does the noise level vary at max. sound control?
It does not vary.
Check IC801, Q301, Q302 and Q303.

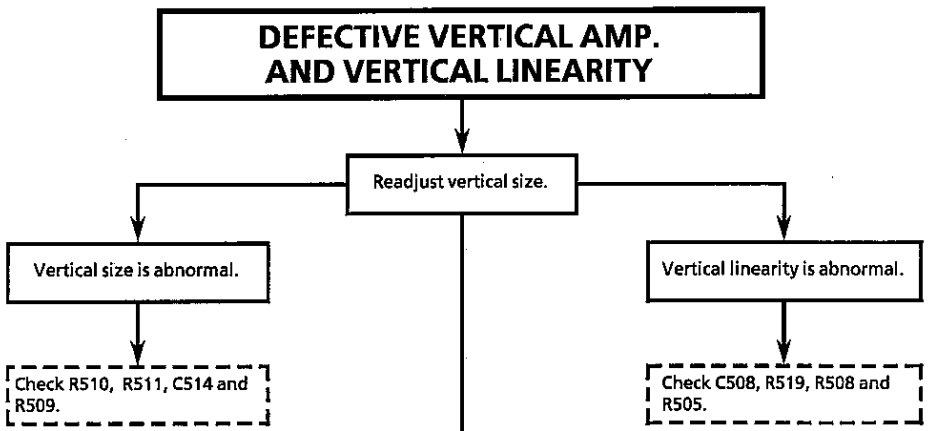
E15

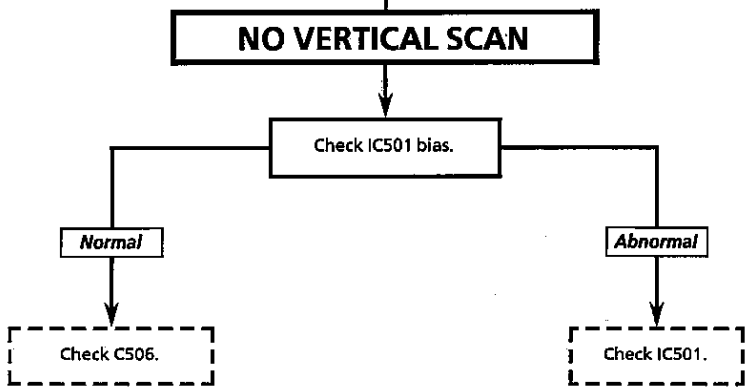

ZU ÜBERPRÜFENDE SCHALTKREISE:
• Tuner.
• PIF.
• Automatische Verstärkungsregelung (AGC).
• + B2 (8V), + B3 (9V) -Stromquelle.
KEIN BILD, KEIN TON
Besteht erhöhtes Bildrauschen bei max. Kontrast-, Helligkeits-oder Toneinstellung?
Erhöhte Störungen und kein Signalempfang.
Bildrauschen vermindert sich, der Klangpegel schwankt jedoch beachtlich.
Tuner BL, BH, BU sowie + B3-Vorspannungen.
+ B3 muß ca. 9 V betragen.
BL muß ca. 9V oder BH ca. 9V betragen (mit dem Bandschalter in der VHF-Position).
BU muß ca. 9V betragen (mit dem Bandschalter in der UHF-Position).
Liegen am Stift (10) des IC801 8V + B2 an?
Normal
Abnormal
IC801 überprüfen.
D733, L732, R731 R648 und IC601 überprüfen.
Normal
Die Tuner-AGC überprüfen.
Normal
Abnormal
Den Tuner-Schaltkreis überprüfen.
IC801 überprüfen.


ZU ÜBERPRÜFENDE SCHALTKREISE:
• Ton-ZF-Verstärkerschaltkreis
• Klangdetektor-Schaltkreis
• Klangschalter und Abschwächregler
• Audio-Ausgangsschaltkreis
KEIN TON
Liegen ca. 9,3 V am Stift (1) des IC301 an ?
Nein
Ja
Q304, D302, R327, R313 und FB303 überprüfen.
Schwankt der Störpegel bei max. eingestelltem Klangregler ?
Keine Schwankung
IC801, Q301, Q302, und Q303 überprüfen.

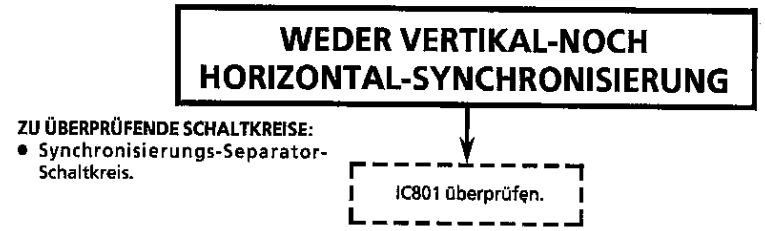
G15

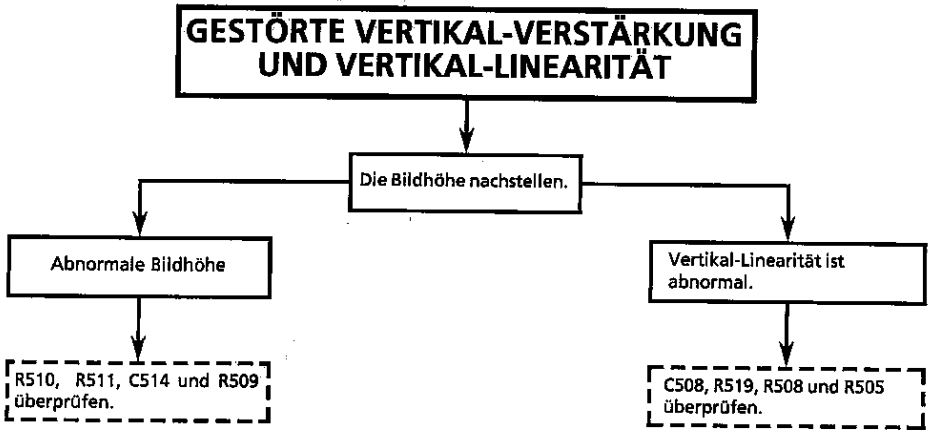

NEITHER VERTICAL NOR HORIZONTAL SYNCHRONIZATION
CIRCUIT TO BE CHECKED:
• Sync. Separator Circuit.
Check IC801.

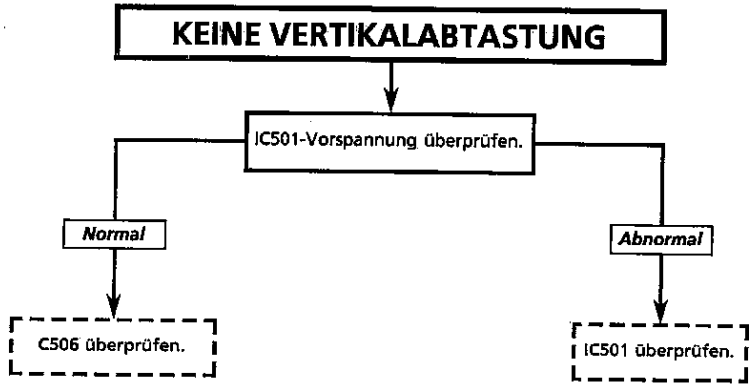

DEFECTIVE VERTICAL AMP. AND VERTICAL LINEARITY
Readjust vertical size.
Vertical size is abnormal.
Check R510, R511, C514 and R509.
Vertical linearity is abnormal.
Check C508, R519, R508 and R505.


NO VERTICAL SCAN
Check IC501 bias.
Normal
Check C506.
Abnormal
Check IC501.

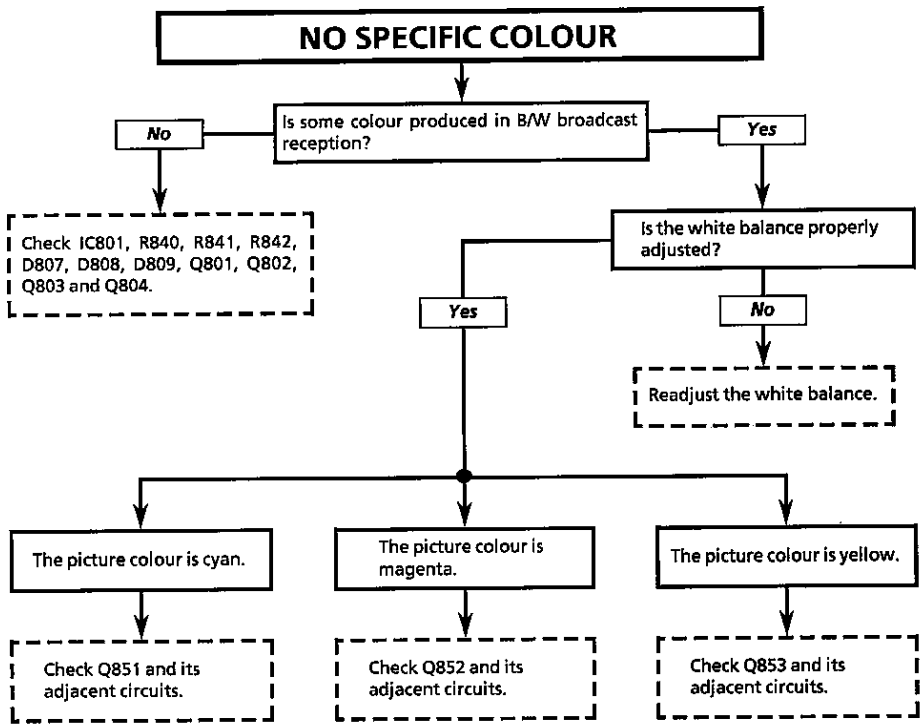
E16

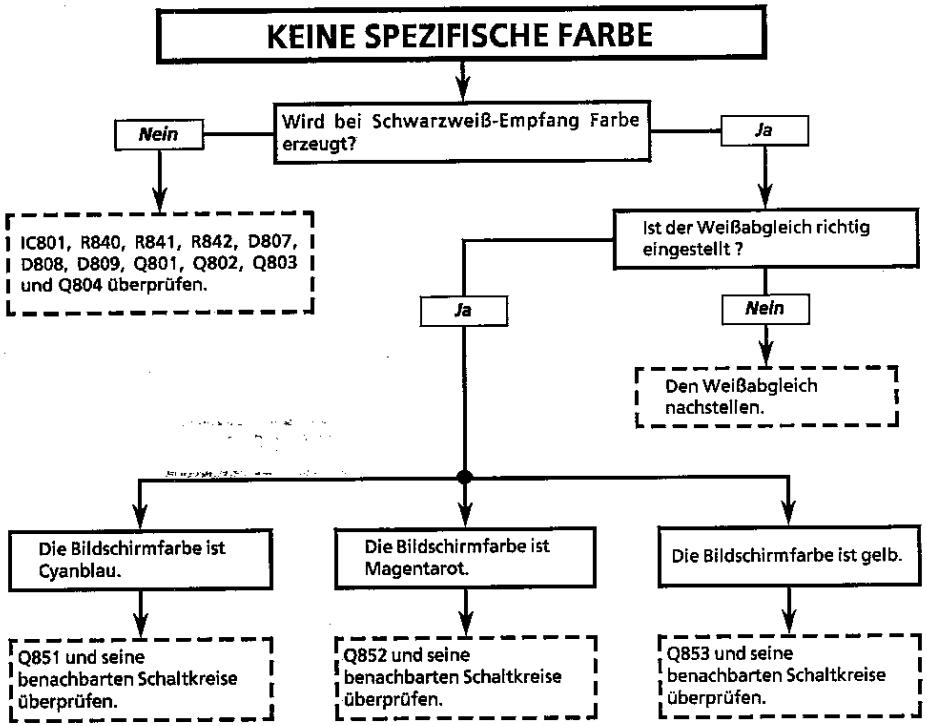

WEDER VERTIKAL-NOCH HORIZONTAL-SYNCHRONISIERUNG
ZU ÜBERPRÜFENDE SCHALTKREISE:
• Synchronisierungs-Separator-Schaltkreis.
IC801 überprüfen.

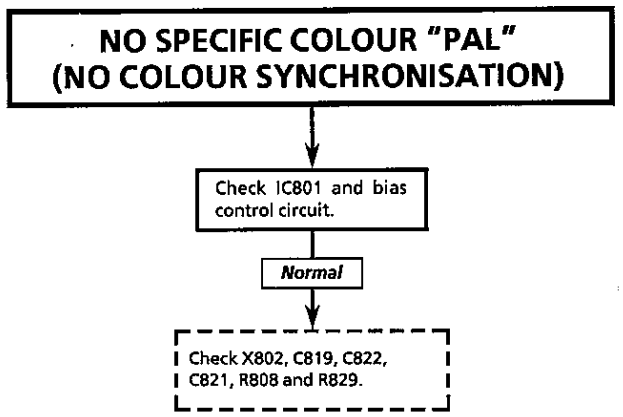

GESTÖRTE VERTIKAL-VERSTÄRKUNG UND VERTIKAL-LINEARITÄT
Die Bildhöhe nachstellen.
Abnormale Bildhöhe
R510, R511, C514 und R509 überprüfen.
Vertikal-Linearität ist abnormal.
C508, R519, R508 und R505 überprüfen.


KEINE VERTIKALABTASTUNG
IC501-Vorspannung überprüfen.
Normal
C506 überprüfen.
Abnormal
IC501 überprüfen.

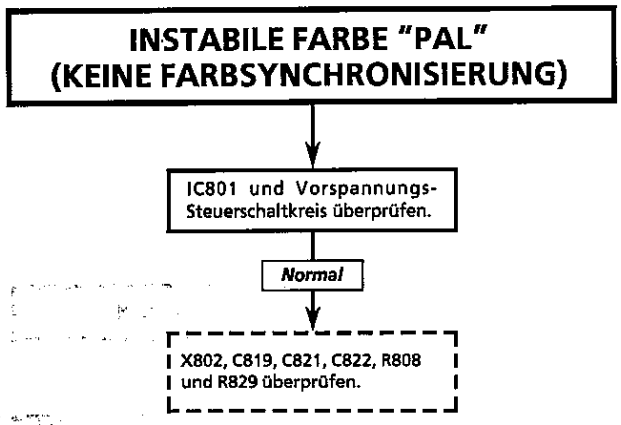
G16


NO SPECIFIC COLOUR
No
Is some colour produced in B/W broadcast reception?
Yes
Check IC801, R840, R841, R842, D807, D808, D809, Q801, Q802, Q803 and Q804.
Is the white balance properly adjusted?
Yes
No
Readjust the white balance.
The picture colour is cyan.
The picture colour is magenta.
The picture colour is yellow.
Check Q851 and its adjacent circuits.
Check Q852 and its adjacent circuits.
Check Q853 and its adjacent circuits.


KEINE SPEZIFISCHE FARBE
Nein
Wird bei Schwarzweiß-Empfang Farbe erzeugt?
Ja
IC801, R840, R841, R842, D807, D808, D809, Q801, Q802, Q803 und Q804 überprüfen.
Ist der Weißabgleich richtig eingestellt ?
Ja
Nein
Den Weißabgleich nachstellen.
Die Bildschirmfarbe ist Cyanblau.
Die Bildschirmfarbe ist Magentarot.
Die Bildschirmfarbe ist gelb.
Q851 und seine benachbarten Schaltkreise überprüfen.
Q852 und seine benachbarten Schaltkreise überprüfen.
Q853 und seine benachbarten Schaltkreise überprüfen.

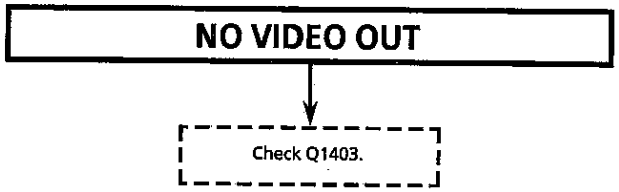

NO SPECIFIC COLOUR "PAL"
(NO COLOUR SYNCHRONISATION)
Check IC801 and bias control circuit.
Normal
Check X802, C819, C822, C821, R808 and R829.

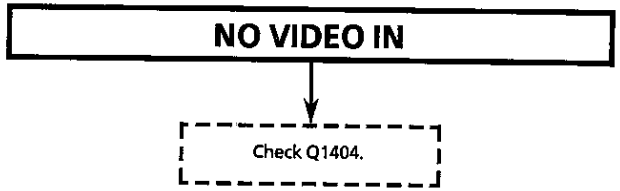
E17

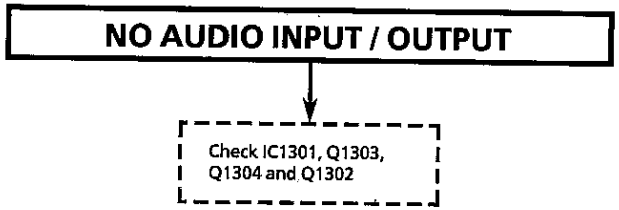

INSTABILE FARBE "PAL"
(KEINE FARBSYNCHRONISIERUNG)
IC801 und Vorspannungs-Steuerschaltkreis überprüfen.
Normal
X802, C819, C821, C822, R808 und R829 überprüfen.

G17

## ■ 21-PIN SECTION

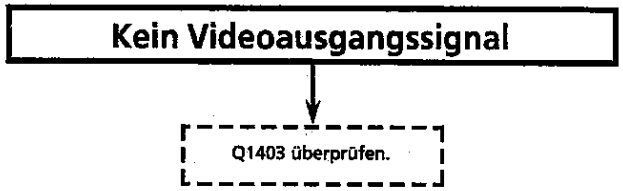


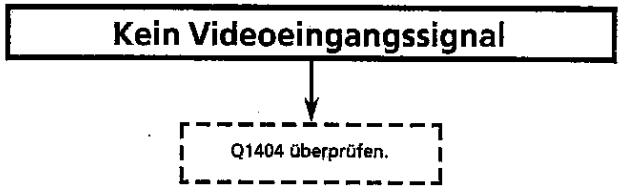



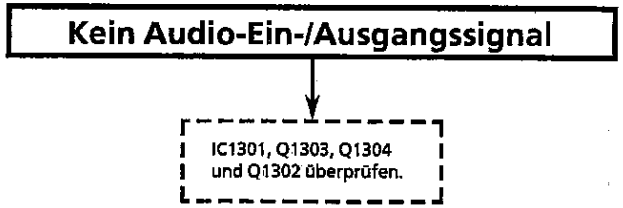




E18

## ■ 21POL Abschnitt

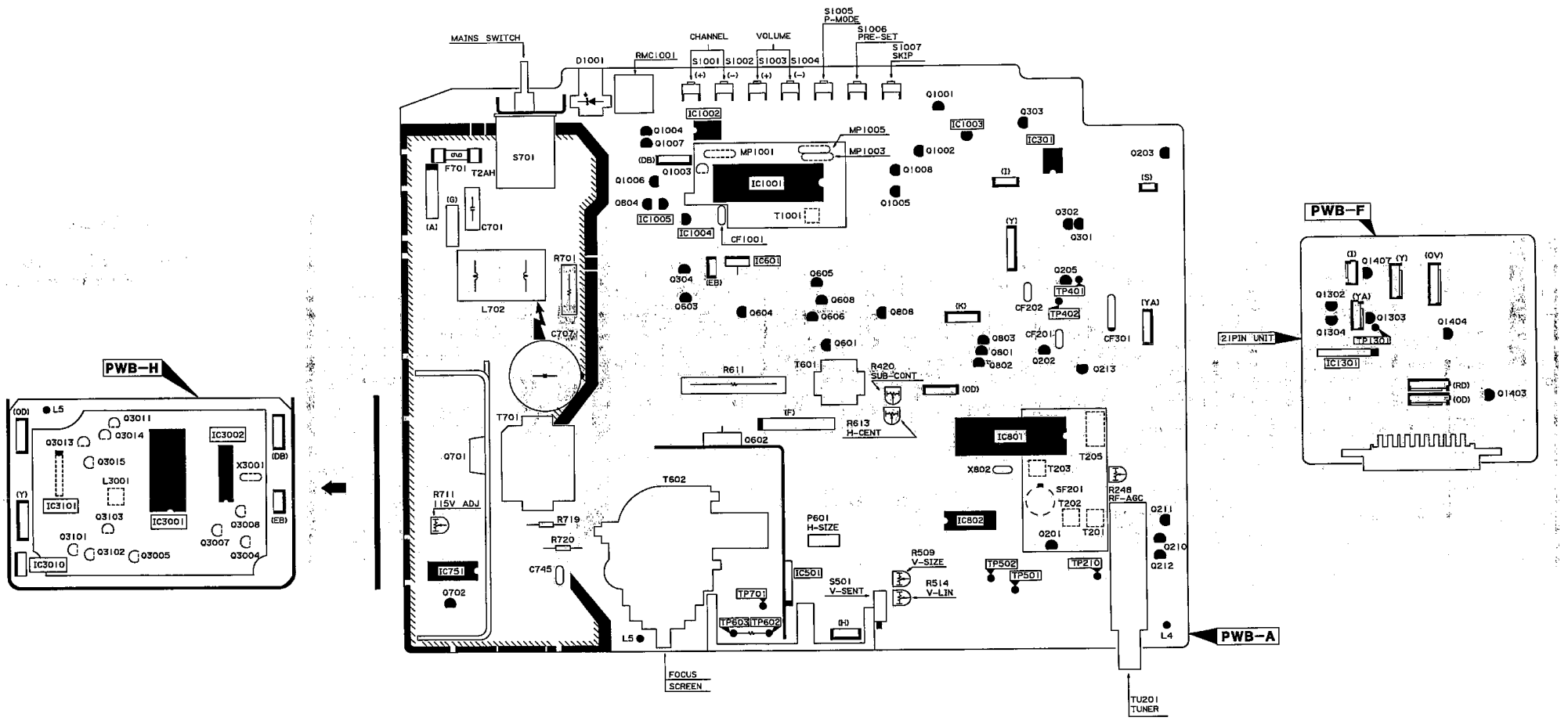


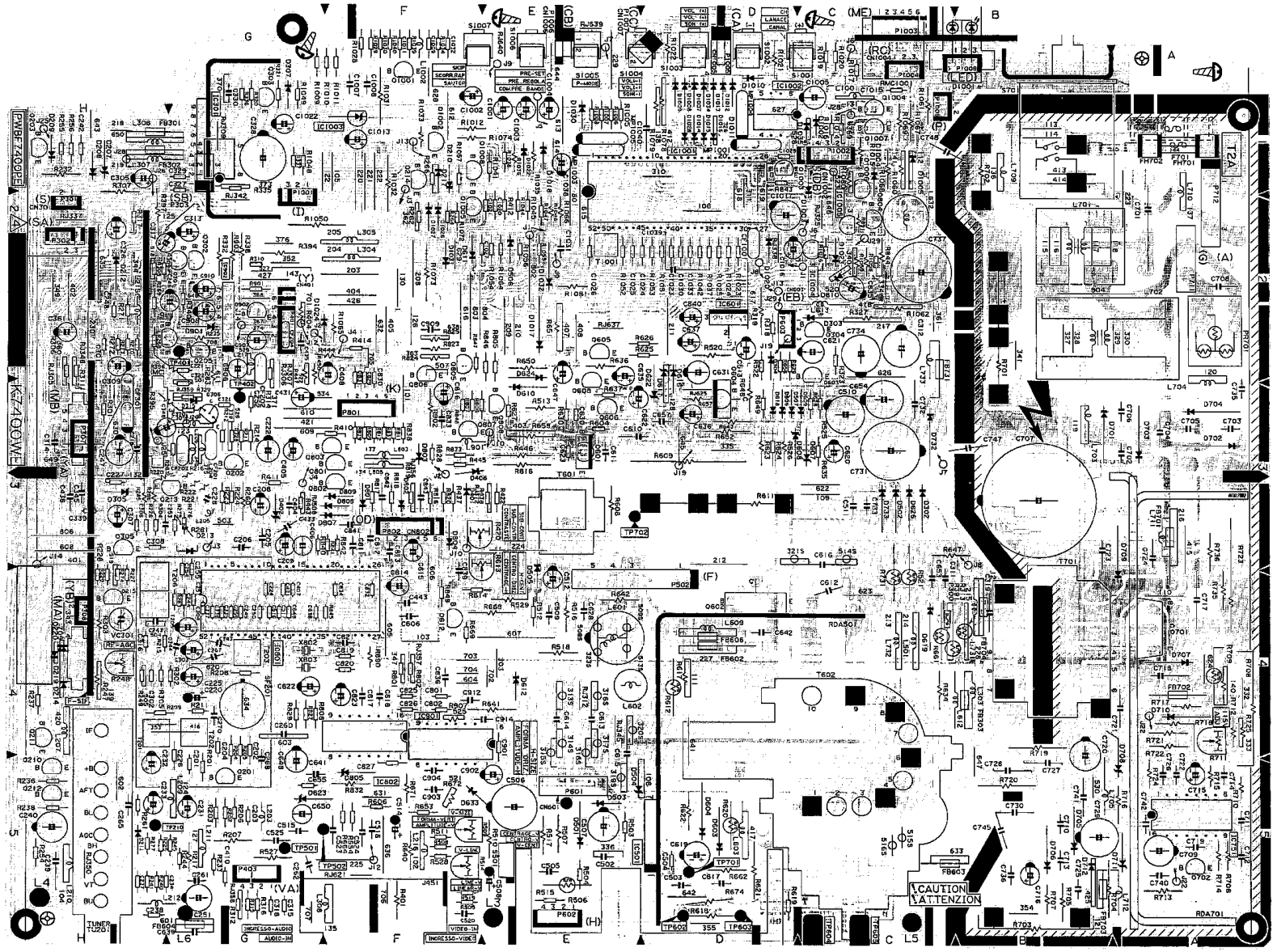

G18

# CHASSIS LAYOUT
# CHASSISANORDNUNGSPLAN

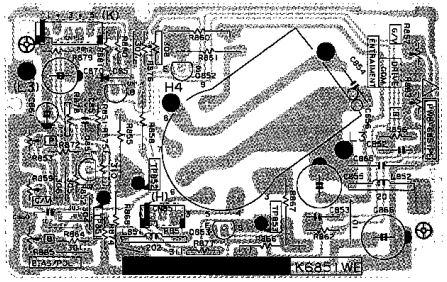


# PRINTED WIRING BOARD ASSEMBLIES
**(All the PWBs here are shown as viewed from their wiring sides.)**

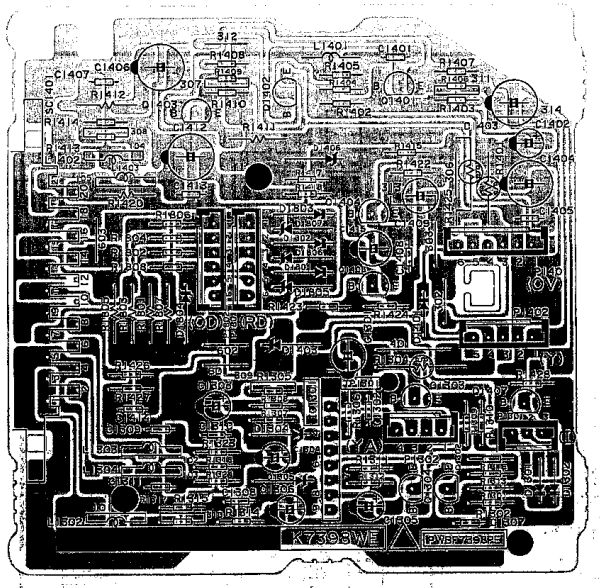
# LEITERPLATTENEINHEITEN
**(Alle hier gezeigten Platten sind von der Leiterbahnseite aus gesehen.)**



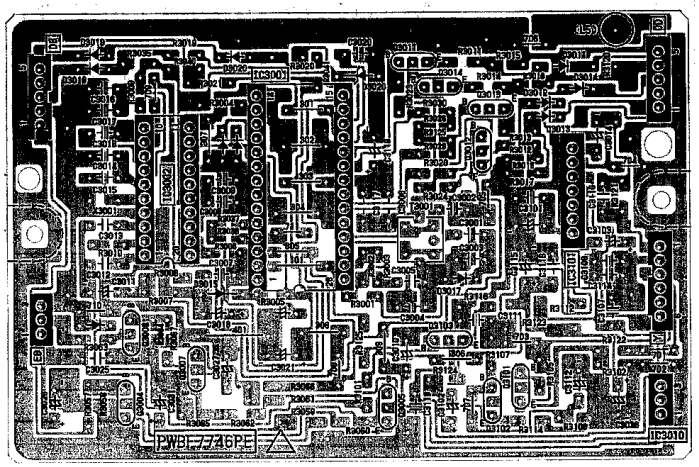
**PWB-A: Mother Unit / Hauptplatine**



**PWB-B: CRT Socket Unit / Bildröhrenplatine**



PWB-F: 21-Pin Unit / 21Pol-Einheit



PWB-H: TELETEXT Unit /
TELETEXT-Einheit

# DESCRIPTION OF SCHEMATIC DIAGRAM

**SAFETY NOTE:**
1. DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACEING PARTS.
2. SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.

**IMPORTANT SAFETY NOTICE:**
PARTS MARKED WITH "⚠" ( ▒▒▒▒ ) ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET. BE SURE TO REPLACE THESE PARTS WITH SPECIFIED ONES FOR MAINTAINING THE SAFETY AND PERFOMANCE OF THE SET.

**SERVICE PRECAUTION:**
THE AREA ENCLOSED BY THIS LINE ( ▬ ▪ ▬ ) IS DIRECTLY CONNECTED WITH AC MAINS VOLTAGE.
WHEN SERVICING THE AREA, CONNECT AN ISOLATING TRANSFORMER
BETWEEN TV RECEIVER AND AC LINE TO ELIMINATE HAZARD OF ELECTRIC SHOCK.

**NOTE:**
1. The unit of resistance "ohm" is omitted (K = 1000 ohms, M = Megaohm).
2. All resistors are 1/8 watt, unless otherwise noted.
3. All capacitors are μF, unless otherwise noted (P = μμF).

**VOLTAGE MEASUREMENT CONDITIONS:**
1. Voltages in parenthesis measured with no Signal.
2. Voltages without parenthesis measured with 3mV B & W or Colour-Signal.
3. All the voltages in each point are measured with VTVM.

**WAVEFORM MEASUREMENT CONDITIONS:**
1. Colour bar generator signal of 2.3 V peak to peak applied at Base of Video Buffer Amp. Q202.
2. Approximately 4.0 V AGC bias.

**CAUTION:**
**This circuit diagram is original one, therefore there may be a slight difference from yours.**

# BESCHREIBUNG DES SCHEMATISCHEN SCHALTPLANS

**SICHERHEITSANMERKUNGEN:**
1. VOR DEM AUSWECHSELN VON TEILEN MUSS UNBEDINGT NETZSTECKER AUS DER NETZSTECKDOSE GEZOGEN WERDEN.
2. DIE WARMEABLEITER DER HALBLEITER SOLLTEN BEIM BETRIEB DES CHASSIS ALS MÖGLICHE URSACHEN VON GEFÄHRLICHEN ELEKTRISCHEN SCHLÄGEN BETRACHTET WERDEN.

**WICHTIGE SICHERHEITSANMERKUNGEN:**
MIT "⚠" ( ▒▒▒▒ ) BEZEICHNETEN TEILE SIND BESONDERS WICHTIG FÜR DIE AUFRECHTERHALTUNG DER SICHERHEIT. BEIM WECHDIESER TEILE SOLLTEN DIE VORGESCHRIEBENEN TEILE IMMER VERWENDET WERDEN, UM SOWOHL DIE SICHERHEIT ALS AUCH DIE LEISTUNG DES GERÄTES AUFRECHTZUERHALTEN.

**VORSICHTSMASSREGEL BEI DER WARTUNG:**
DAß MIT DIESER LINIE ( ▬ ▪ ▬ ) EINGEFAßTE GEBIET IST DIREKT AN DER WECHSELSPANNUNG ANGESCHLOSSEN. BEI DER WERTUNG DES GEBIETES EINEN TRENNTRANSFORMATOR ZWISCHEN FERNSEHGERÄT SCHLAGE ZU VERMEIDEN.

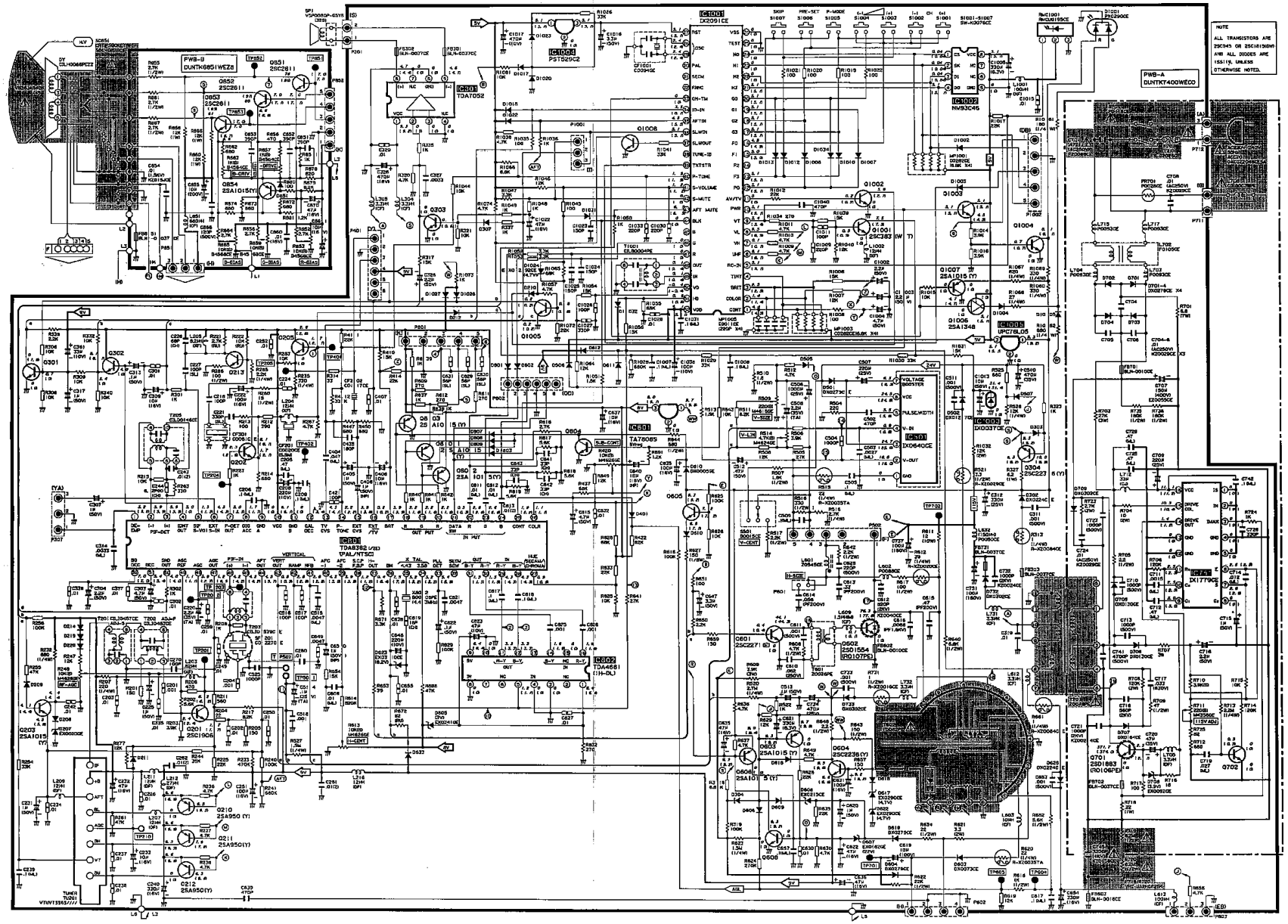
**ANMERKUNG:**
1. Der Widerstandswert "Ohm" wurde in den Plän ausgelassen (k = 1000 Ohms, M = Megaohm).
2. Falls nicht anders angegeben, handlet es sich bei den Widerstanden um 1/8 Watt-Auührunge.
3. Falls nicht anders angegeben, handelt es sich bei den Kondensatoren um μF-Typen (p = μμF).

**SPANNUNGSMESSUNGEN:**
1. In Klammen eingeschlossene Spannungswerte werden ohne Signal gemessen.
2. Nicht in Klammern eingeschlossene Spannungswerte werden mit einem 3mV S/W-oder Farbsignal gemessen.
3. Alle Spannungswerte werden mit einem Va-SEL kuumöhre-Volt-meter gemessen.

**SIGNALFORMMESSUNGEN:**
1. Das Farbbalkensignal von 2,3V Spitze zu Spitze wird der Basis des Video-Pufferverstärkers Q202 zugeleitet.
2. Ungefähr 4,0V AGC-Vorspannung.

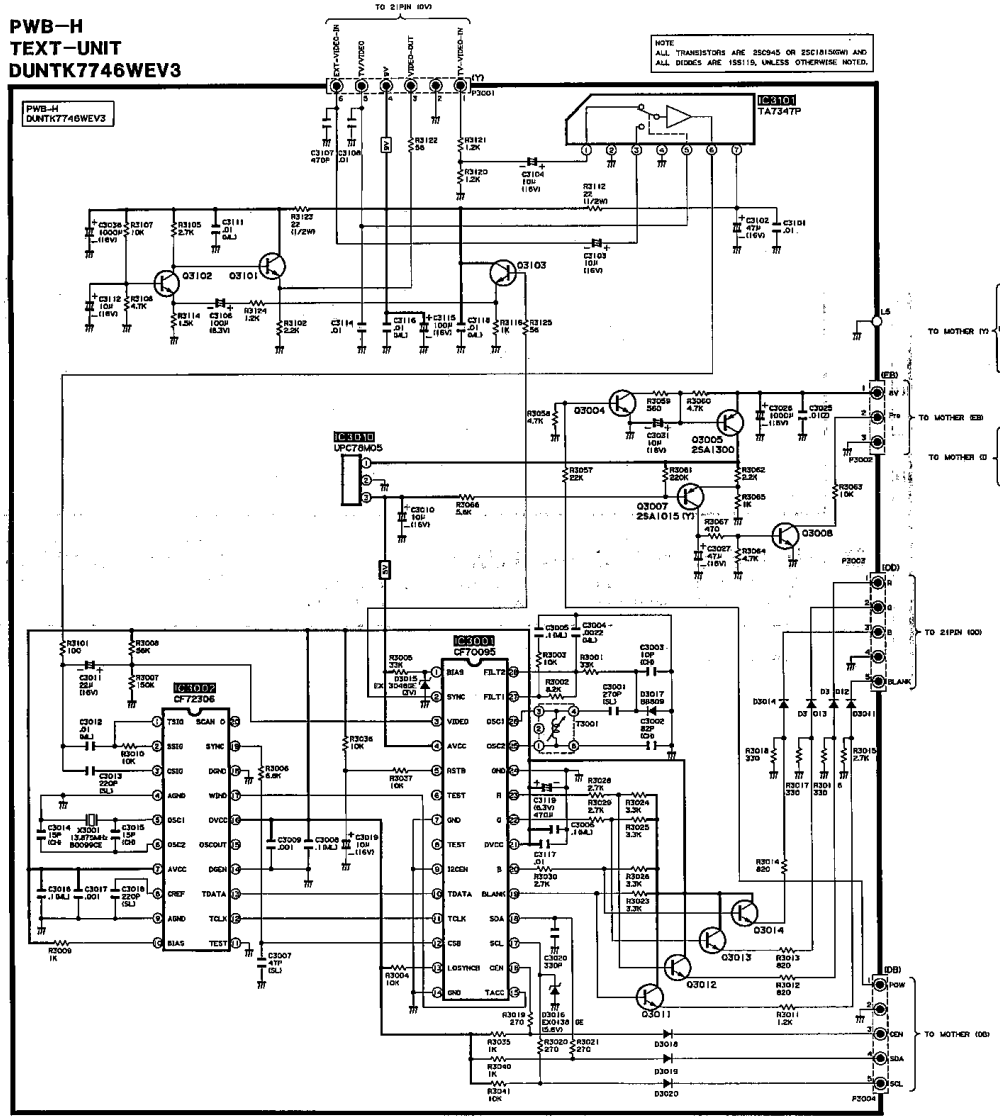
**ACHTUNG:**
**bei diesem Schaltplan handelt es sich um den ursprünglichen. Esönnen daher geringfügige Unterschiede zu dem Ihrem bestehen.**

# SCHEMATIC DIAGRAM: Main Unit /
# SCHEMATISCHER SCHALTPLAN: Haupt-Einheit



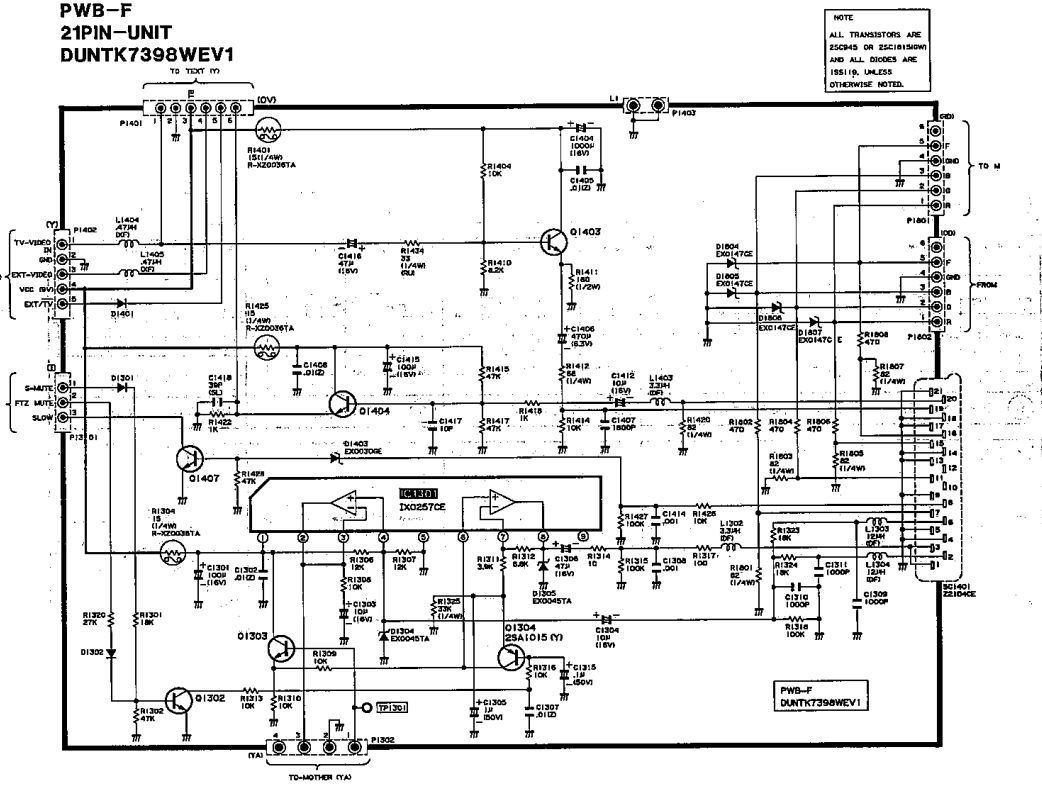
## ■ TELETEXT Unit / TELETEXT-Einheit

PWB–H
TEXT–UNIT
DUNTK7746WEV3




## ■ 21-Pin Unit / 21Pol-Einheit

PWB–F
21PIN–UNIT
DUNTK7398WEV1



# WAVEFORMS

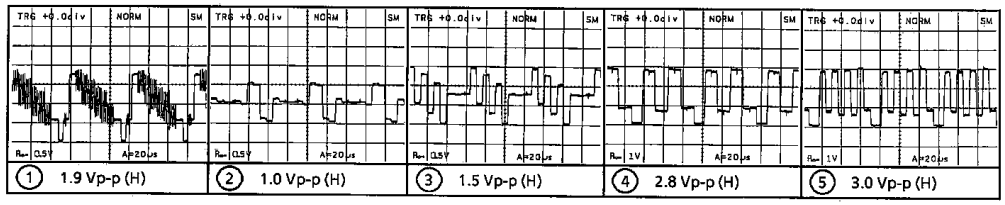
***Waveform Measurement Conditions:***

1. *Colour bar generator signal of 2.3 V peak to peak applied at Base of Video Buffer Amp. Q202.*
2. *Approximately 4.0 V AGC bias.*

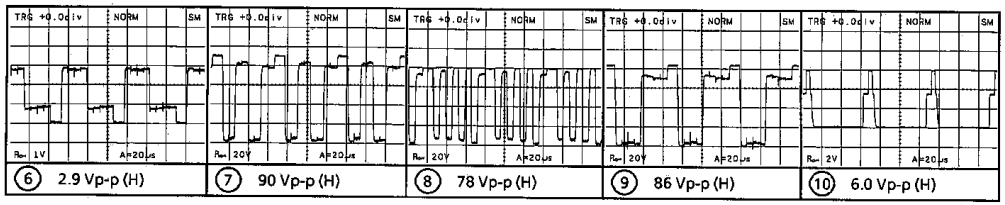
# WELLENFORMEN

***Wellenformmessungen:***

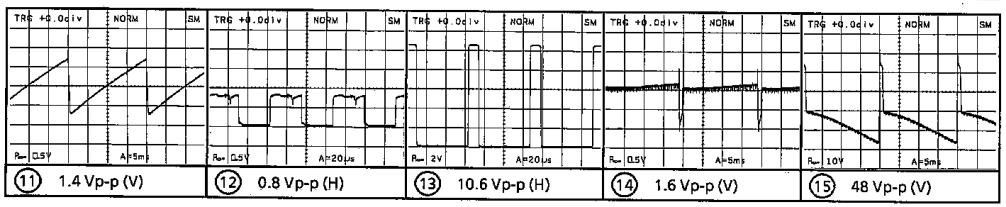
1. *Das Farbbalkensignal von 2,3V Spitze zu Spitze wird der Basis des Video-Pufferverstärkers Q202 zugeleitet.*
2. *Unngefähr 4,0V AGC-Vorspannung.*



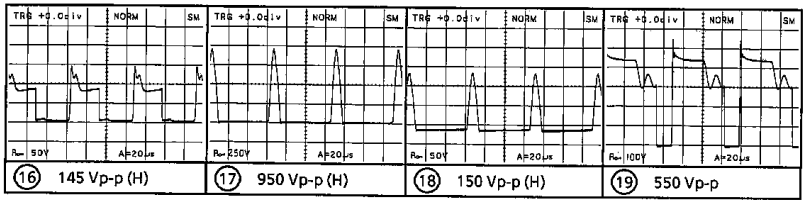
① 1.9 Vp-p (H) ② 1.0 Vp-p (H) ③ 1.5 Vp-p (H) ④ 2.8 Vp-p (H) ⑤ 3.0 Vp-p (H)



⑥ 2.9 Vp-p (H) ⑦ 90 Vp-p (H) ⑧ 78 Vp-p (H) ⑨ 86 Vp-p (H) ⑩ 6.0 Vp-p (H)



⑪ 1.4 Vp-p (V) ⑫ 0.8 Vp-p (H) ⑬ 10.6 Vp-p (H) ⑭ 1.6 Vp-p (V) ⑮ 48 Vp-p (V)



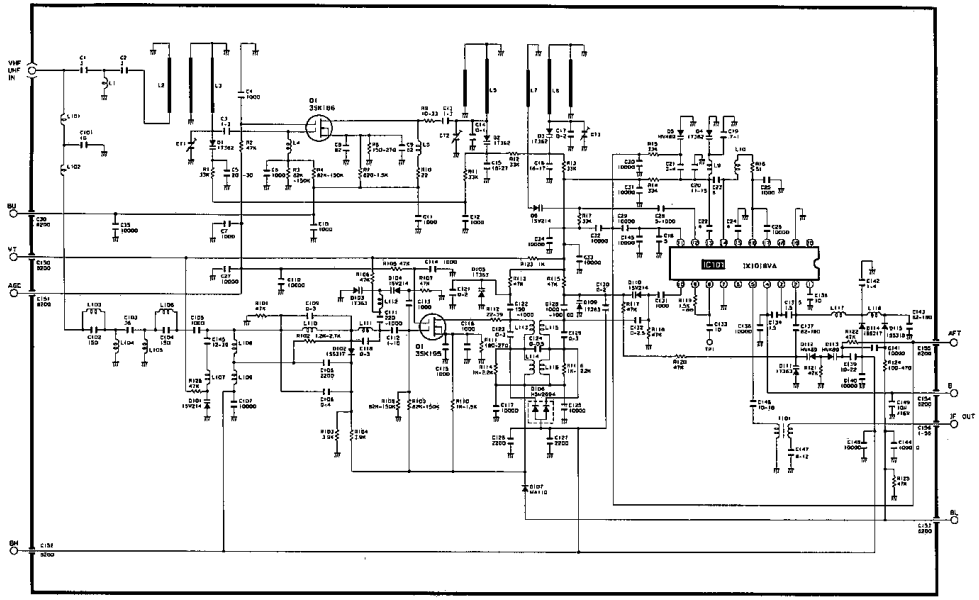
⑯ 145 Vp-p (H) ⑰ 950 Vp-p (H) ⑱ 150 Vp-p (H) ⑲ 550 Vp-p



## ■ Tuner

⚠ VTUVTSC65///

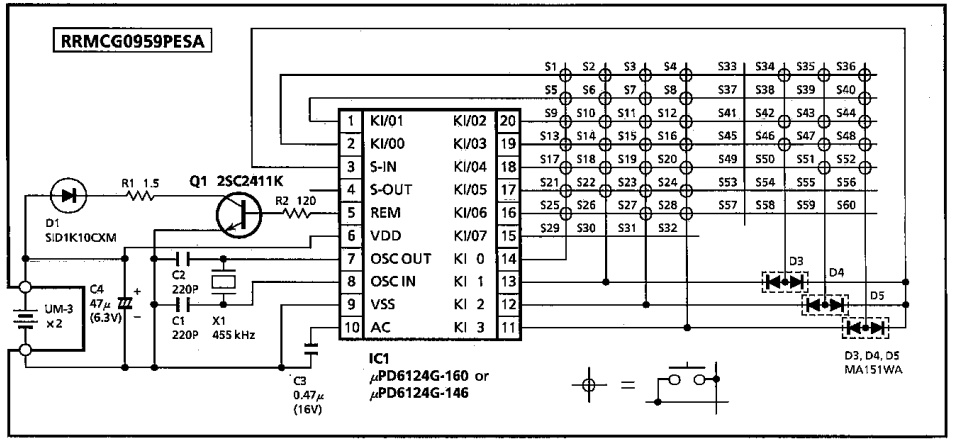
NOTE: The parts here shown are supplied as an assembly but not independently.
HINWEIS: Die hier aufgeführten bauteile werden nur als ganzer bausatz geliefert.



## ■ Infrared Remote Control Unit

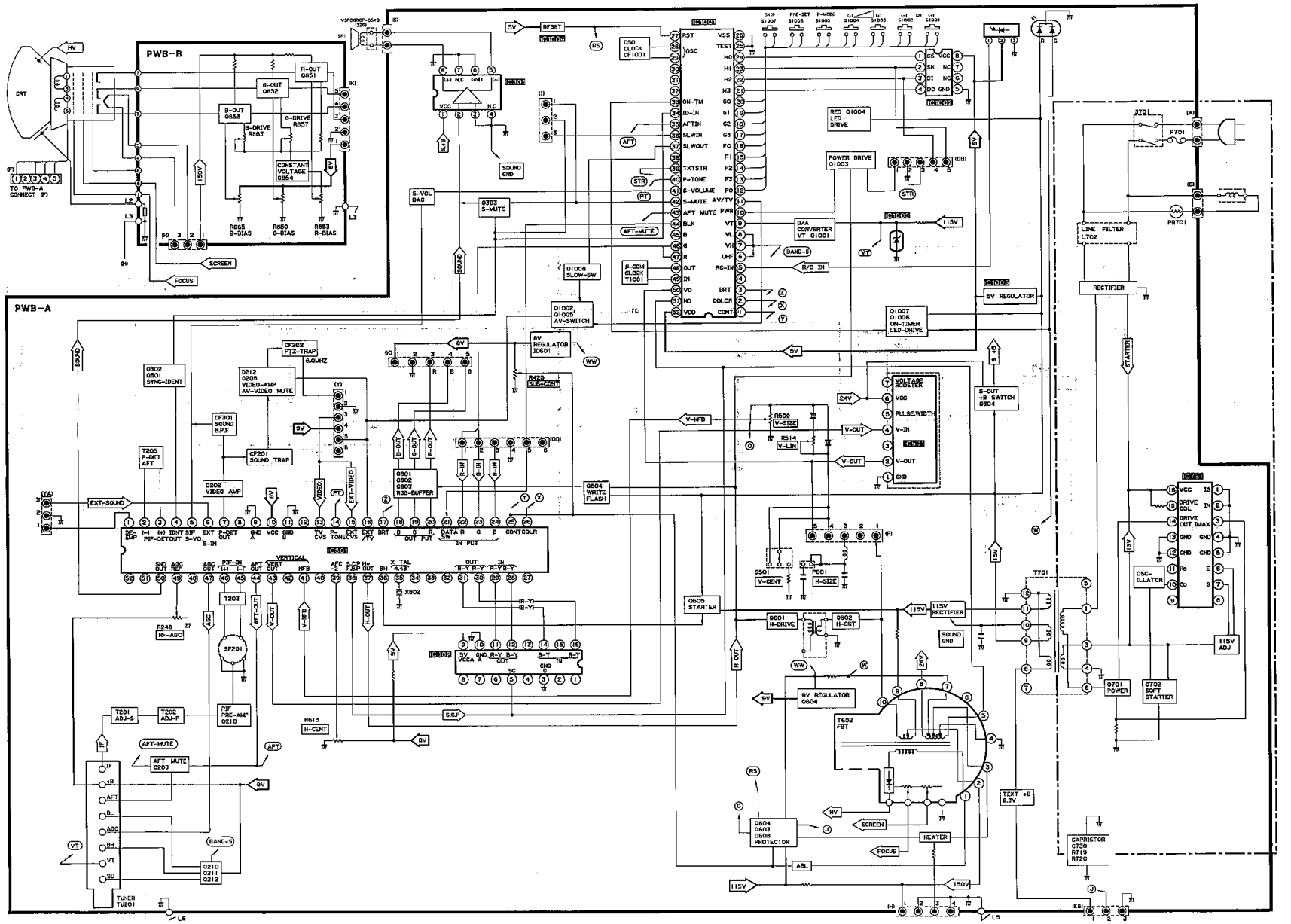
RRMCG0959PESA

NOTE: The parts here shown are supplied as an assembly but not independently.
HINWEIS: Die hier aufgeführten bauteile werden nur als ganzer bausatz geliefert.



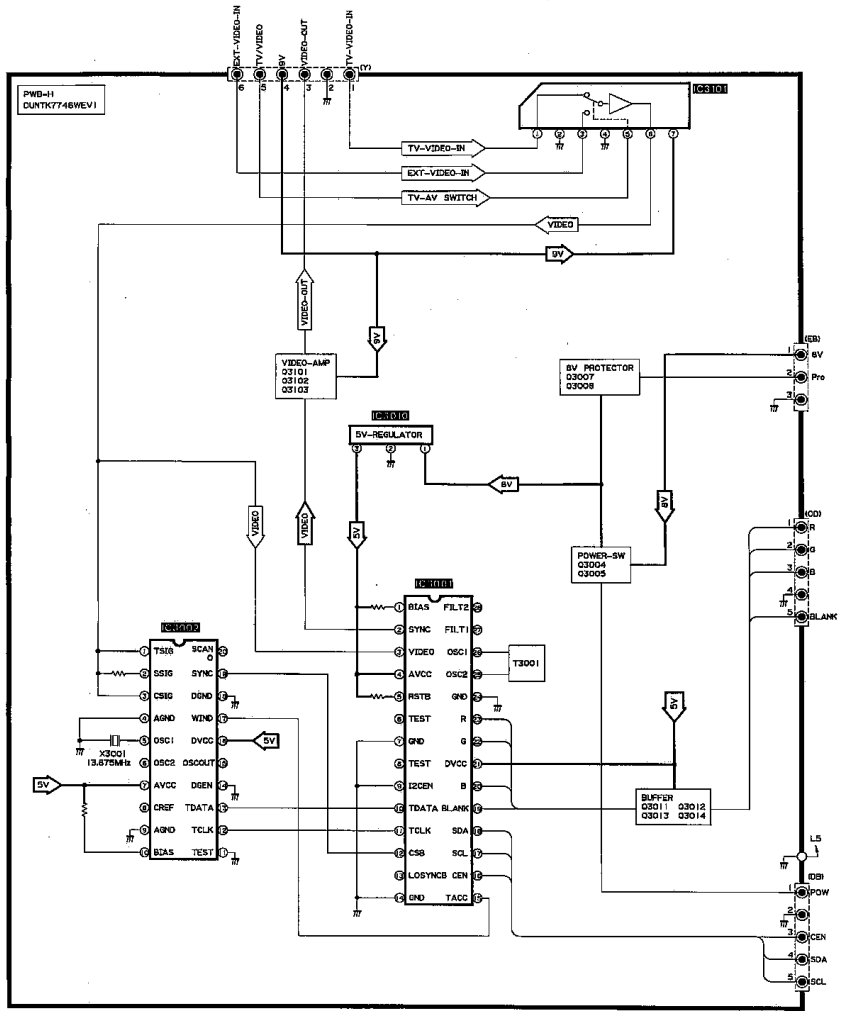
# BLOCK DIAGRAM / BLOCKSCHALTPLAN

## ☐ Main Unit / Haupt-Einheit

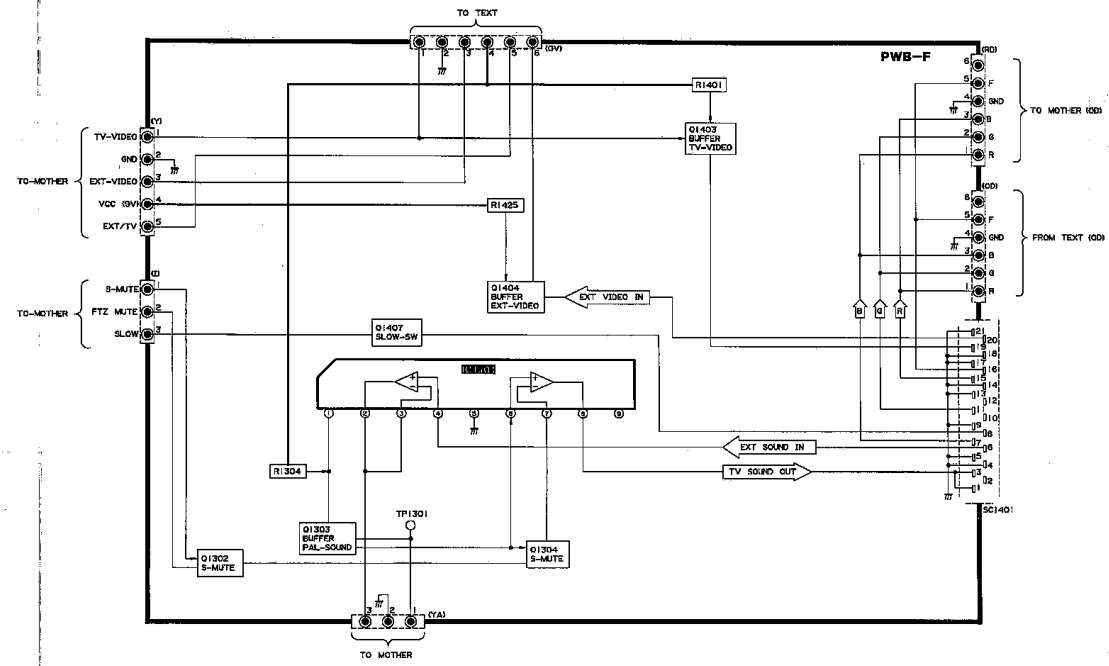


# BLOCK DIAGRAM / BLOCKSCHALTPLAN

## ☐ TELETEXT Unit / TELETEXT-Einheit

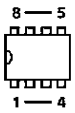



## ☐ 21-Pin Unit / 21Pol-Einheit

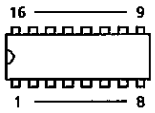


# SOLID STATE DEVICE BASE DIAGRAM
# GRUNDDIAGRAM DER FESTKÖRPEREINRICHTUNG

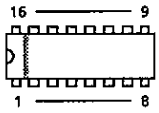
## TOP VIEW / AUFSICHT



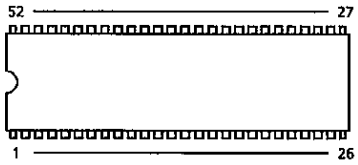

NM93C46
CAT24C02P



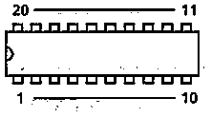

iX1779CE



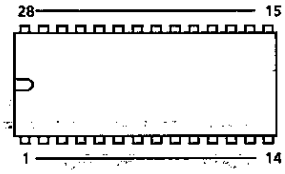

TDA4661



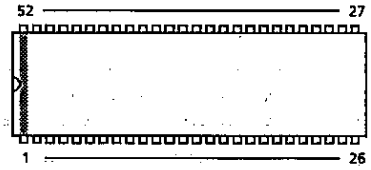

iX2091CE




CF72306



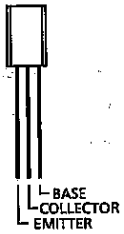

CF70095




TDA8362

## SIDE VIEW / SEITENANSECHT

2SA1015
2SA1300
2SC1815
2SC1906
2SC3279
2SC383
2SC945

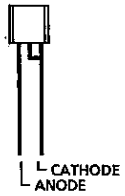



2SC2236
2SC2271

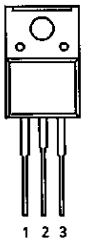
2SA1348

UPC78L05

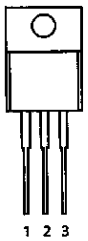
PST529C2



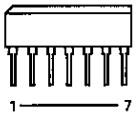

iX0037CE



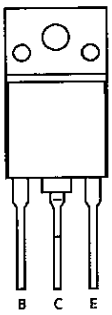

TA7808S



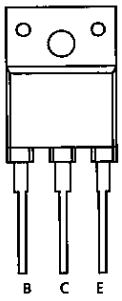

UPC78M05



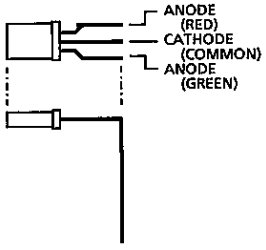

TA7347P



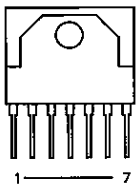

2SD1554



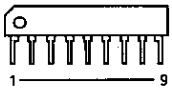

2SD1883




PX0290CE




iX0640CE




iX0257CE

# PARTS LIST

## PARTS REPLACEMENT

Replacement parts which have these special safety characteristics identified in this manual: electrical components having such features are identified by "⚠" in the Replacement Parts Lists. The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

## "HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

1. MODEL NUMBER
2. REF. NO.
3. PART NO.
4. DESCRIPTION
5. CODE
6. QUANTITY

MARK ★ : SPARE PARTS-DELIVERY SECTION

# ERSATZTEILLISTE

## AUSTAUSCH VON TEILEN

Ersatzteile, die besondere Sicherheitseigenschften haben, sind in dieser Anleitung markiert. Elektrische Komponenten mit solchen Eigenshaften sind in den Ersatzteil durch "⚠" gekenn-zeichnet. Der Gebrauch von Ersatzteilen, die nicht deselben Sicherheits-eigenschaften haben wie die vom Hersteller empfohlenen ud in der Bedienungsanleitung angegebenen, können zur Ursache von Blitzeinschlägen, Bränden und anderen Gefahren werden.

## "WIE MAN ERSATSTEILE BESTELLT"

Damit Ihre Bestellung promt und korrekt ausgeführt wird, geben Sie bitte folgende Informationen.

1. MODELL NR.
2. REF. NR.
3. ERSATZTEIL NR.
4. BESCHREIBUNG
5. KODE
6. QUANTITÄT

MARKIERUNG ★ : ERSATZTEILE-LIEFERUNG

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|

## PICTURE TUBE

| | | | | |
|---|---|---|---|---|
| ⚠VB1 | VB36JAR40X/*S | R | CRT, 14" | CC |
| ⚠DY1 | RCiLH0066PEZZ | R | Deflection Yoke | BC |
| ⚠L708 | RCiLG0039PEZZ | R | Degaussing Coil | AH |
| | PMAGF3006CEZZ | J | Purity Magnet | AK |
| | PSPAG0004PEZZ | R | Wedge, Rubber, ×3 used | AB |
| | MSPRT0001PEFJ | R | Spring, CRT | AC |

—— End of PICTURE TUBE ——

## PRINTED WIRING BOARD ASSEMBLIES

***( NOT REPLACEMENT ITEM )***

| | | | | |
|---|---|---|---|---|
| PWB-A | DUNTK7400WEC0 | – | Mother Unit | — |
| PWB-B | DUNTK6851WEZ8 | – | CRT Socket Unit | — |
| PWB-F | DUNTK7398WEV1 | – | 21-Pin Unit | — |
| PWB-H | DUNTK7746WEV3 | – | TELETEXT Unit | — |

—— End of P.W.B. ASSEMBLIES ——

## PWB-A DUNTK7400WEC0
## MOTHER UNIT

### TUNER

***NOTE: THE PARTS HERE SHOWN ARE SUPPLIED AS AN ASSEMBLY BUT NOT INDEPENDENTLY.***

| | | | | |
|---|---|---|---|---|
| TU201 | VTUVTSS6S//// | J | Tuner, VHF/UHF | BK |

### INTEGRATED CIRCUITS

| | | | | |
|---|---|---|---|---|
| IC301 | VHiTDA7052/-1 | J | Audio Output | AL |
| IC501 | RH-iX0640CEZZ | J | Vertical Output | AK |
| IC601 | VHiTA7808S/-1 | J | 8V Regulator | AD |
| IC751 | RH-iX1779CEZZ | J | Power Regulator | AR |
| IC801 | VHiTDA8362/2E | J | Video/Chroma | BA |
| IC802 | VHiTDA4661/-1 | J | | AS |
| IC1001 | RH-iX2091CEZZ | J | Microprocessor | AZ |
| IC1002 | VHiNM93C46/-1 | J | | AG |
| IC1003 | RH-iX0037CEZZ | J | Zener IC | AF |
| IC1004 | VHiPST529C2-1 | J | Reset Switch | AD |
| IC1005 | VHiUPC78L05-4 | J | 5V Regulator | AD |

### TRANSISTORS

| | | | | |
|---|---|---|---|---|
| Q201 | VS2SC1906//1E | J | 2SC1906 | AC |
| Q202 | VS2SC945AP/-1 | J | 2SC945A(P) | AB |
| Q203 | VS2SA1015Y/1E | J | 2SA1015(Y) | AC |
| Q205 | VS2SC945AP/-1 | J | 2SC945A(P) | AB |
| Q210 | VS2SA950-Y/1E | J | 2SA950(Y) | AD |
| Q211 | VS2SA950-Y/1E | J | 2SA950(Y) | AD |
| Q212 | VS2SA950-Y/1E | J | 2SA950(Y) | AD |
| Q213 | VS2SC945AP/-1 | J | 2SC945A(P) | AB |
| Q301 | VS2SC945AP/-1 | J | 2SC945A(P) | AB |
| Q302 | VS2SC945AP/-1 | J | 2SC945A(P) | AB |
| Q303 | VS2SC945AP/-1 | J | 2SC945A(P) | AB |

# PWB-A DUNTK7400WEC0
## MOTHER UNIT (Continued)

### TRANSISTORS (Continued)

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| Q304 | VS2SC2236Y/-1 | J | 2SC2236(Y) | AD |
| Q601 | VS2SC2271E/-1 | J | 2SC2271 | AD |
| Q602 | VS2SD1554//1E | J | 2SD1554 | AL |
| Q603 | VS2SA1015Y/1E | J | 2SA1015(Y) | AC |
| Q604 | VS2SC2236Y/-1 | J | 2SC2236(Y) | AD |
| Q605 | VS2SC945AP/-1 | J | 2SC945A(P) | AB |
| Q606 | VS2SA1015Y/1E | J | 2SA1015(Y) | AC |
| Q608 | VS2SC945AP/-1 | J | 2SC945A(P) | AB |
| Q701 | VS2SD1883//-1 | J | 2SD1883 | AL |
| Q702 | VS2SC945AP/-1 | J | 2SC945A(P) | AB |
| Q801 | VS2SA1015Y/1E | J | 2SA1015(Y) | AC |
| Q802 | VS2SA1015Y/1E | J | 2SA1015(Y) | AC |
| Q803 | VS2SA1015Y/1E | J | 2SA1015(Y) | AC |
| Q804 | VS2SC945AP/-1 | J | 2SC945A(P) | AB |
| Q1001 | VS2SC383-WT-1 | J | 2SC383(WT) | AE |
| Q1002 | VS2SC945AP/-1 | J | 2SC945A(P) | AB |
| Q1003 | VS2SC945AP/-1 | J | 2SC945A(P) | AB |
| Q1004 | VS2SC945AP/-1 | J | 2SC945A(P) | AB |
| Q1005 | VS2SC945AP/-1 | J | 2SC945A(P) | AB |
| Q1006 | VS2SA1348//-1 | J | 2SA1348 | AB |
| Q1007 | VS2SA1015Y/1E | J | 2SA1015(Y) | AC |
| Q1008 | VS2SC945AP/-1 | J | 2SC945A(P) | AB |

### DIODES

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| D207 | RH-EX0030GEZZ | J | Zener Diode | AB |
| D208 | VHD1SS119//1E | J | 1SS119 | AA |
| D209 | VHD1SS119//1E | J | 1SS119 | AA |
| D210 | VHD1SS119//1E | J | 1SS119 | AA |
| D211 | VHD1SS119//1E | J | 1SS119 | AA |
| D212 | VHD1SS119//1E | J | 1SS119 | AA |
| D214 | VHD1SS119//1E | J | 1SS119 | AA |
| D219 | VHD1SS119//1E | J | 1SS119 | AA |
| D220 | VHD1SS119//1E | J | 1SS119 | AA |
| D302 | RH-DX0224CEZZ | J | RU3AMV1 | AE |
| D303 | VHD1SS119//1E | J | 1SS119 | AA |
| D304 | VHD1SS119//1E | J | 1SS119 | AA |
| D307 | VHD1SS119//1E | J | 1SS119 | AA |
| D401 | VHD1SS119//1E | J | 1SS119 | AA |
| D501 | RH-DX0279CEZZ | J | 1N4005 | AB |
| D502 | RH-DX0127CEZZ | J | 1S5295G | AC |
| D503 | VHD1SS119//1E | J | 1SS119 | AA |
| D504 | RH-EX0298CEZZ | J | Zener Diode | AA |
| D505 | VHD1SS119//1E | J | 1SS119 | AA |
| D506 | VHD1SS119//1E | J | 1SS119 | AA |
| D507 | VHD1SS119//1E | J | 1SS119 | AA |
| D603 | RH-DX0073CEZZ | J | RH1Z | AD |
| D604 | RH-DX0279CEZZ | J | 1N4005 | AB |
| D606 | VHD1SS119//1E | J | 1SS119 | AA |
| D607 | RH-EX0182GEZZ | J | Zener Diode, 22V | AB |

### DIODES (Continued)

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| D608 | RH-EX0215CEZZ | J | Zener Diode | AB |
| D609 | VHD1SS119//1E | J | 1SS119 | AA |
| D610 | VHD1SS119//1E | J | 1SS119 | AA |
| D611 | VHD1SS119//1E | J | 1SS119 | AA |
| D612 | VHD1SS119//1E | J | 1SS119 | AA |
| D616 | VHD1SS119//1E | J | 1SS119 | AA |
| D617 | RH-EX0290CEZZ | J | Zener Diode, 4.7V | AA |
| D618 | VHD1SS119//1E | J | 1SS119 | AA |
| D619 | RH-DX0279CEZZ | J | 1N4005 | AB |
| D622 | RH-EX0290CEZZ | J | Zener Diode, 4.7V | AA |
| D623 | RH-EX0310CEZZ | J | Zener Diode | AA |
| D626 | RH-DX0224CEZZ | J | | AB |
| D633 | VHD1SS119//1E | J | 1SS119 | AA |
| D701 | RH-DX0279CEZZ | J | | AB |
| D702 | RH-DX0279CEZZ | J | | AB |
| D703 | RH-DX0279CEZZ | J | | AB |
| D704 | RH-DX0279CEZZ | J | | AB |
| D705 | RH-DX0130CEZZ | J | EU-1Z | AE |
| D706 | RH-DX0130CEZZ | J | EU-1Z | AE |
| D707 | RH-DX0164CEZZ | J | | AC |
| D708 | RH-EX0092CEZZ | J | Zener Diode | AB |
| D709 | RH-DX0302CEZZ | J | | AC |
| D732 | RH-DX0302CEZZ | J | | AC |
| D733 | RH-DX0302CEZZ | J | | AC |
| D801 | VHD1SS119//1E | J | 1SS119 | AA |
| D802 | VHD1SS119//1E | J | 1SS119 | AA |
| D803 | VHD1SS119//1E | J | 1SS119 | AA |
| D804 | VHD1SS119//1E | J | 1SS119 | AA |
| D805 | RH-EX0341GEZZ | J | Zener Diode, 3V | AA |
| D807 | VHD1SS119//1E | J | 1SS119 | AA |
| D808 | VHD1SS119//1E | J | 1SS119 | AA |
| D809 | VHD1SS119//1E | J | 1SS119 | AA |
| D810 | RH-DX0005GEZZ | J | | AA |
| D1001 | RH-PX0290CEZZ | J | LED, Red/Green | AC |
| D1002 | VHD1SS119//1E | J | 1SS119 | AA |
| D1003 | VHD1SS119//1E | J | 1SS119 | AA |
| D1004 | VHD1SS119//1E | J | 1SS119 | AA |
| D1005 | VHD1SS119//1E | J | 1SS119 | AA |
| D1007 | VHD1SS119//1E | J | 1SS119 | AA |
| D1008 | VHD1SS119//1E | J | 1SS119 | AA |
| D1010 | VHD1SS119//1E | J | 1SS119 | AA |
| D1012 | VHD1SS119//1E | J | 1SS119 | AA |
| D1013 | VHD1SS119//1E | J | 1SS119 | AA |
| D1017 | VHD1SS119//1E | J | 1SS119 | AA |
| D1018 | VHD1SS119//1E | J | 1SS119 | AA |
| D1020 | VHD1SS119//1E | J | 1SS119 | AA |
| D1022 | VHD1SS119//1E | J | 1SS119 | AA |
| D1023 | VHD1SS119//1E | J | 1SS119 | AA |
| D1024 | RH-EX0292CEZZ | J | Zener Diode | AB |
| D1026 | VHD1SS119//1E | J | 1SS119 | AA |
| D1027 | VHD1SS119//1E | J | 1SS119 | AA |
| D1031 | VHD1SS119//1E | J | 1SS119 | AA |
| D1032 | VHD1SS119//1E | J | 1SS119 | AA |
| D1034 | VHD1SS119//1E | J | 1SS119 | AA |

# PWB-A DUNTK7400WEC0
## MOTHER UNIT (Continued)

### PACKAGED CIRCUITS

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| MP1001 | RMPTC0282CEZZ | J | Resistor Array, 6.8k×4 | AC |
| MP1003 | RMPTC0282CEZZ | J | Resistor Array, 6.8k×4 | AC |
| MP1005 | RMPTE0011CEZZ | J | Cap. Array, 220p×4 | AC |
| PR701 | RMPTP0028CEZZ | J | Positive Coefficient Thermistor | AG |
| X802 | RCRSB0008PEZZ | R | Crystal, 4.43 MHz | AH |

### COILS AND TRANSFORMERS

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| CF201 | RFiLC0020CEZZ | J | Ceramic Filter, 5.5 MHz | AE |
| CF202 | RFiLC0117CEZZ | J | Ceramic Filter | AD |
| CF301 | RFiLC0061CEZZ | J | Ceramic Filter | AF |
| CF1001 | RFiLC0094GEZZ | J | Ceramic Filter | AC |
| L203 | VP-DFR82K0000 | J | Coil, 0.82μH | AB |
| L204 | VP-XF120K0000 | J | Coil, 12μH | AB |
| L205 | VP-XF8R2K0000 | J | Coil, 8.2μH | AB |
| L207 | VP-DF120K0000 | J | Coil, 12μH | AB |
| L209 | VP-DF120K0000 | J | Coil, 12μH | AB |
| L211 | VP-DF120K0000 | J | Coil, 12μH | AB |
| L212 | VP-DF270K0000 | J | Coil, 27μH | AB |
| L216 | VP-DF120K0000 | J | Coil, 12μH | AB |
| L304 | VP-CF3R3K0000 | J | Coil, 3.3μH | AB |
| L305 | VP-CF3R3K0000 | J | Coil, 3.3μH | AB |
| L601 | RCiLZ0545CEZZ | J | Linearity Coil | AF |
| L602 | RCiLP0088CEZZ | J | Peaking Coil, 3.3mH | AG |
| L603 | VP-CF100K0000 | J | Coil, 10μH | AB |
| L609 | VP-CF1R5M0000 | J | Coil, 1.5μH | AB |
| L612 | VP-CF3R3K0000 | J | Coil, 3.3μH | AB |
| L613 | VP-CF101K0000 | J | Coil, 100μH | AB |
| L632 | RCiLP0050CEZZ | J | Peaking Coil | AE |
| L702 | RCiLF0105CEZZ | J | Line Filter | AP |
| L703 | RCiLP0093CEZZ | J | Peaking Coil | AE |
| L704 | RCiLP0093CEZZ | J | Peaking Coil | AE |
| L705 | VP-DF3R3K0000 | J | Coil, 3.3μH | AB |
| L712 | VP-CJ330K0000 | J | Coil, 33μH | AB |
| L715 | RCiLP0093CEZZ | J | Peaking Coil | AE |
| L717 | RCiLP0093CEZZ | J | Peaking Coil | AE |
| L731 | VP-CF3R3K0000 | J | Coil, 3.3μH | AB |
| L732 | VP-CF3R3K0000 | J | Coil, 3.3μH | AB |
| L1001 | VP-XF101K0000 | J | Coil, 100μH | AB |
| L1002 | VP-XF120K0000 | J | Coil, 12μH | AB |
| SF201 | RFiLC0227CEZZ | J | Surface Accoustic Wave Filter | AN |
| T201 | RCiLi0457CEZZ | J | Adj. Sound Trap Coil | AD |
| T202 | RCiLi0483CEZZ | J | Adj. Picture Trap Coil | AD |
| T203 | RCiLi0539CEZZ | J | S.A.W. Matching Coil | AF |
| T205 | RCiLD0146CEZZ | J | PIF Detector | AF |
| T601 | RTRNZ0026PEZZ | R | Horizontal Drive Trans. | AH |
| ⚠ T602 | RTRNF0082PEZZ | R | F.B.T. (Flyback Trans.) | BF |
| ⚠ T701 | RTRNZ0048PEZZ | R | Power Regulator Trans. | AW |
| T1001 | RCiLB0004PEZZ | R | On Screen Display Adj. | AF |

### CONTROLS

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| R248 | RVR-M4626GEZZ | J | 10k(B) RF-AGC | AB |
| R420 | RVR-M4626GEZZ | J | 10k(B) Sub-Contrast | AB |
| R509 | RVR-M4616GEZZ | J | 220(B) Vertical Size | AB |
| R514 | RVR-M4624GEZZ | J | 4.7k(B) Vertical Linearity | AB |
| R613 | RVR-M4626GEZZ | J | 10k(B) Horizontal Center | AB |
| R711 | RVR-M4356GEZZ | J | 220(B) 115V Adjust | AB |

### CAPACITORS

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| C201 | VCKYMN1HB102K | J | 1000P 50V Ceramic | AA |
| C202 | VCKYMN1CY103N | J | 0.01 16V Ceramic | AA |
| C203 | VCKYMN1CY103N | J | 0.01 16V Ceramic | AA |
| C204 | VCKYMN1HB102K | J | 1000P 50V Ceramic | AA |
| C205 | VCFYHA1HA474J | J | 0.47 50V M. polyster | AD |
| C206 | VCFYHA1HA104J | J | 0.1 50V M. Polyster | AB |
| C208 | VCEAGA1AW227M | J | 220 10V Electrolytic | AB |
| C209 | VCFYHA1HA104J | J | 0.1 50V M. Polyster | AB |
| C218 | VCKYD41HB101K | J | 100P 50V Ceramic | AA |
| C220 | VCSATA1VE225K | J | 2.2 35V Tantalum | AC |
| C221 | VCCSPA1HL331J | J | 330p 50V Ceramic | AA |
| C222 | VCEAGA1CW107M | J | 100 16V Electrolytic | AB |
| C224 | VCKYMN1CY103N | J | 0.01 16V Ceramic | AA |
| C225 | VCEAGA1HW105M | J | 1 50V Electrolytic | AC |
| C226 | VCKYMN1CY103N | J | 0.01 16V Ceramic | AA |
| C227 | VCCSPA1HL101J | J | 100p 50V Ceramic | AA |
| C228 | VCCCPA1HL680J | J | 68p 50V Ceramic | AA |
| C231 | VCEAGA1HW105M | J | 1 50V Electrolytic | AC |
| C232 | VCEAGA1CW476M | J | 47 16V Electrolytic | AB |
| C233 | VCEAGA1CW106M | J | 10 16V Electrolytic | AA |
| C234 | VCKYMN1CY103N | J | 0.01 16V Ceramic | AA |
| C237 | VCKYMN1CY103N | J | 0.01 16V Ceramic | AA |
| C238 | VCKYMN1CY103N | J | 0.01 16V Ceramic | AA |
| C239 | VCFYHA1HA104J | J | 0.1 50V M. Polyster | AB |
| C240 | VCEAGA1CW337M | J | 330 16V Electrolytic | AC |
| C242 | VCKYMN1CY103N | J | 0.01 16V Ceramic | AA |
| C243 | VCKYPA1HF103Z | J | 0.01 50V Ceramic | AA |
| C244 | VCCCD41HH8R2K | J | 8.2p 50V Ceramic | AA |
| C249 | VCKYMN1CY103N | J | 0.01 16V Ceramic | AA |
| C250 | VCKYMN1CY103N | J | 0.01 16V Ceramic | AA |
| C251 | VCEAGA1CW107M | J | 100 16V Electrolytic | AB |
| C252 | VCKYMN1CY103N | J | 0.01 16V Ceramic | AA |
| C259 | VCKYMN1CY103N | J | 0.01 16V Ceramic | AA |
| C260 | VCKYD41CY103N | J | 0.01 16V Ceramic | AA |
| C261 | VCKYPA1HF103Z | J | 0.01 50V Ceramic | AA |
| C262 | VCKYPA1HF103Z | J | 0.01 50V Ceramic | AA |
| C270 | VCKYD41HB101K | J | 100p 50V Ceramic | AA |
| C301 | VCKYMN1CY103N | J | 0.01 16V Ceramic | AA |
| C302 | VCKYMN1CY103N | J | 0.01 16V Ceramic | AA |
| C303 | VCEAGA1HW475M | J | 4.7 50V Electrolytic | AB |
| C304 | VCEAGA1HW225M | J | 2.2 50V Electrolytic | AB |
| C307 | VCEAGA1HW105M | J | 1 50V Electrolytic | AC |
| C309 | VCEAGA1CW106M | J | 10 16V Electrolytic | AA |
| C311 | VCKYPA2HB102K | J | 0.001 500V Ceramic | AA |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|

# PWB-A DUNTK7400WEC0
## MOTHER UNIT (Continued)

### CAPACITORS (Continued)

| | | | | | | |
|---|---|---|---|---|---|---|
| C312 | VCEAGA1EW337M | J | 330 | 25V | Electrolytic | AC |
| C313 | VCEAGA1HW104M | J | 0.1 | 50V | Electrolytic | AA |
| C314 | VCQYSH1HM332K | J | 3300p | 50V | Mylar | AA |
| C317 | VCEAGA1HW105M | J | 1 | 50V | Electrolytic | AC |
| C319 | VCKYD41CY103N | J | 0.01 | 16V | Celamic | AA |
| C326 | VCEAGA1HW225M | J | 2.2 | 50V | Electrolytic | AB |
| C327 | VCKYPA1HB332K | J | 3300p | 50V | Celamic | AA |
| C328 | VCEAGA1CW477M | J | 470 | 16V | Electrolytic | AC |
| C329 | VCKYMN1CY103N | J | 0.01 | 16V | Celamic | AA |
| C335 | VCKYMN1CY103N | J | 0.01 | 16V | Celamic | AA |
| C337 | VCKYMN1CY103N | J | 0.01 | 16V | Celamic | AA |
| C338 | VCKYMN1CY103N | J | 0.01 | 16V | Celamic | AA |
| C361 | VCEAGA1AW336M | J | 33 | 10V | Electrolytic | AA |
| C404 | VCFYHA1HA473J | J | 0.047 | 50V | M. Polyster | AB |
| C405 | VCEAGA1HW105M | J | 1 | 50V | Electrolytic | AC |
| C406 | VCE9GA1HW105M | J | 1 | 50V | Elect. (N.P) | AB |
| C407 | VCKYMN1CY103N | J | 0.01 | 16V | Ceramic | AA |
| C408 | VCEAGA1CW106M | J | 10 | 16V | Electrolytic | AA |
| C421 | VCKYMN1HB101K | J | 100p | 50V | Ceramic | AA |
| C435 | VCKYPA1HB181K | J | 180p | 50V | Ceramic | AA |
| C502 | VCKYPA1HB471K | J | 470p | 50V | Ceramic | AA |
| C503 | VCQYSH1HM272K | J | 2700p | 50V | Mylar | AA |
| C504 | VCKYMN1HB102K | J | 1000p | 50V | Ceramic | AA |
| C505 | VCFYHA1HA104J | J | 0.1 | 50V | M. Polyster | AB |
| C506 | VCEAGA1EW108M | J | 1000 | 25V | Electrolytic | AD |
| C507 | VCEAGA1EW227M | J | 220 | 25V | Electrolytic | AC |
| C508 | VCSATA1VE225K | J | 2.2 | 35V | Tantalum | AC |
| C509 | VCFYHA1HA104J | J | 0.1 | 50V | M. Polyster | AB |
| C510 | VCEAGA1VW477M | J | 470 | 35V | Electrolytic | AD |
| C511 | VCKYPA2HB102K | J | 0.001 | 500V | Ceramic | AA |
| C512 | VCEAGA1HW474M | J | 0.47 | 50V | Electrolytic | AA |
| C513 | VCEAGA1HW105M | J | 1 | 50V | Electrolytic | AC |
| C514 | VCSATA1VE104K | J | 0.1 | 35V | Tantalum | AC |
| C515 | VCQYSH1HM472K | J | 4700p | 50V | Mylar | AA |
| C516 | VCKYMN1HB101K | J | 100p | 50V | Ceramic | AA |
| C517 | VCKYMN1HB101K | J | 100p | 50V | Ceramic | AA |
| C518 | VCKYPA1HB102K | J | 1000p | 50V | Ceramic | AA |
| C525 | VCKYD41HB102K | J | 1000p | 50V | Ceramic | AA |
| C606 | VCQYSH1HM103K | J | 0.01 | 50V | Mylar | AA |
| C610 | VCFYSB2EB823J | J | 0.082 | 250V | M. Polyester | AD |
| C611 | VCKYPA2HB102K | J | 0.001 | 500V | Ceramic | AA |
| C612 | RC-KZ0040CEZZ | J | 820p | 2kV | Ceramic | AD |
| C613 | VCFPPD2DB334J | J | 0.33 | 200V | M. Polyester | AF |
| C614 | VCQPSC2DA563K | J | 0.056 | 200V | Mylar | AD |
| C615 | VCFPPD2DB474J | J | 0.47 | 200V | M. Polyester | AE |
| C616 | VCFPPD3CA682H | J | 6800p | 1.6kV | M. Polyester | AE |
| C617 | VCFYHA1HA104J | J | 0.1 | 50V | M. Polyester | AB |
| C619 | VCEAGA2AW106M | J | 10 | 100V | Electrolytic | AC |
| C620 | VCEAGA1HW105M | J | 1 | 50V | Electrolytic | AC |
| C621 | VCEAGA0JW337M | J | 330 | 6.3V | Electrolytic | AB |
| C622 | VCEAGA1CW476M | J | 47 | 16V | Electrolytic | AB |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|

### CAPACITORS (Continued)

| | | | | | | |
|---|---|---|---|---|---|---|
| C628 | VCKYPA2HB221K | J | 220p | 500V | Ceramic | AA |
| C630 | VCKYMN1CY103N | J | 0.01 | 16V | Ceramic | AA |
| C631 | VCEAGA1CW107M | J | 100 | 16V | Electrolytic | AB |
| C635 | VCEAGA1CW476M | J | 47 | 16V | Electrolytic | AB |
| C636 | VCEAGA1CW476M | J | 47 | 16V | Electrolytic | AB |
| C637 | VCEAGA1CW106M | J | 10 | 16V | Electrolytic | AA |
| C638 | VCKYMN1CY103N | J | 0.01 | 16V | Ceramic | AA |
| C639 | VCKYD41HB471K | J | 470p | 50V | Ceramic | AA |
| C647 | VCEAGA1HW335M | J | 3.3 | 50V | Electrolytic | AB |
| C648 | VCEAGA1AW227M | J | 220 | 10V | Electrolytic | AB |
| C649 | VCKYMN1CX472N | J | 4700p | 16V | Ceramic | AA |
| C650 | VCE9GA1HW105M | J | 1 | 50V | Elect. (N.P) | AB |
| C653 | VCKYPA2HB102K | J | 1000p | 500V | Ceramic | AA |
| C654 | VCEAGA1CW337M | J | 330 | 16V | Electrolytic | AC |
| C655 | VCKYMN1CY103N | J | 0.01 | 16V | Ceramic | AA |
| C657 | VCFYHA1HA104J | J | 0.1 | 50V | M. Polyster | AB |
| ⚠ C701 | RC-FZ0088CEZZ | J | 0.47 | AC250V | M. Polyster | AK |
| C704 | RC-KZ0029CEZZ | J | 0.01 | AC250V | Ceramic | AC |
| C705 | RC-KZ0029CEZZ | J | 0.01 | AC250V | Ceramic | AC |
| C706 | RC-KZ0029CEZZ | J | 0.01 | AC250V | Ceramic | AC |
| C707 | RC-EZ0055CEZZ | J | 150 | 400V | Electrolytic | AN |
| C708 | RC-KZ0029CEZZ | J | 0.01 | AC250V | Ceramic | AC |
| C709 | VCEAGA1EW227M | J | 220 | 25V | Electrolytic | AC |
| C710 | VCKYPA2HB102K | J | 0.001 | 500V | Ceramic | AA |
| C711 | VCQYSH1HM152K | J | 1500p | 50V | Mylar | AA |
| C712 | VCFYHA1HA474J | J | 0.47 | 50V | M. Polyster | AD |
| C713 | VCKYPA2HB102K | J | 0.001 | 500V | Ceramic | AA |
| C714 | VCQYSH1HM123K | J | 0.012 | 50V | Mylar | AB |
| C715 | VCEAGA1HW105M | J | 1 | 50V | Electrolytic | AC |
| C716 | VCEAGA1HW225M | J | 2.2 | 50V | Electrolytic | AB |
| C717 | VCQPSC2JA333K | J | 0.033 | 630V | M. Polyster | AB |
| C718 | VCKYPH3DB561K | J | 560p | 2kV | Ceramic | AC |
| C719 | VCQYSH1HM273K | J | 0.027 | 50V | Mylar | AB |
| C720 | VCEAGA1VW476M | J | 47 | 35V | Electrolytic | AB |
| C721 | RC-KZ0024CEZZ | J | 1000p | 2kV | Ceramic | AC |
| C723 | VCKYPA2HB102K | J | 0.001 | 500V | Ceramic | AA |
| C724 | RC-KZ0029CEZZ | J | 0.01 | AC250V | Ceramic | AC |
| C725 | VCFYHA1HA474J | J | 0.47 | 50V | M. Polyster | AD |
| C726 | VCKYPA1HB331K | J | 330p | 50V | Ceramic | AA |
| C729 | VCFYHA1HA474J | J | 0.47 | 50V | M. Polyster | AD |
| C731 | VCEAAH2CW107M | J | 100 | 160V | Electrolytic | AE |
| C732 | RC-KZ0024CEZZ | J | 1000p | 2kV | Ceramic | AC |
| C733 | VCKYPA2HB102K | J | 0.001 | 500V | Ceramic | AA |
| C734 | VCEAGA1EW477M | J | 470 | 25V | Electrolytic | AD |
| C737 | VCEAGH2CW107M | J | 100 | 160V | Electrolytic | AE |
| C741 | VCKYPA2HB472K | J | 4700p | 500V | Ceramic | AB |
| C742 | VCFYHA1HA104J | J | 0.1 | 50V | M. Polyster | AB |
| C745 | RC-KZ0156CEZZ | J | 3300p | 4kV | Ceramic | AG |
| C811 | VCQYSH1HM103K | J | 0.01 | 50V | Mylar | AA |
| C812 | VCQYSH1HM103K | J | 0.01 | 50V | Mylar | AA |
| C813 | VCKYPA1HF103Z | J | 0.01 | 50V | Ceramic | AA |
| C815 | VCEAGA1HW475M | J | 4.7 | 50V | Electrolytic | AB |
| C817 | VCFYHA1HA104J | J | 0.1 | 50V | M. Polyster | AB |
| C818 | VCFYHA1HA104J | J | 0.1 | 50V | M. Polyster | AB |

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## MOTHER UNIT (Continued)

### CAPACITORS (Continued)

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| C819 | VCCCMN1HH180J | J | 18p 50V Ceramic | AA |
| C821 | VCKYPA1HB472K | J | 4700p 50V Ceramic | AA |
| C822 | VCEAGA1HW104M | J | 0.1 50V Electrolytic | AA |
| C823 | VCEAGA1AW476M | J | 47 10V Electrolytic | AA |
| C825 | VCKYPA1HB102K | J | 1000p 50V Ceramic | AA |
| C826 | VCKYPA1HB102K | J | 1000p 50V Ceramic | AA |
| C827 | VCKYMN1CY103N | J | 0.01 16V Ceramic | AA |
| C829 | VCCSMN1HL560J | J | 56p 50V Ceramic | AA |
| C830 | VCCSMN1HL560J | J | 56p 50V Ceramic | AA |
| C831 | VCCSMN1HL560J | J | 56p 50V Ceramic | AA |
| C832 | VCKYMN1CY103N | J | 0.01 16V Ceramic | AA |
| C835 | VCEAGA1CW107M | J | 100 16V Electrolytic | AD |
| C840 | VCE9GA1CW106M | J | 10 16V Elect. (N.P) | AB |
| C841 | VCCSD41HL330J | J | 33p 50V Ceramic | AA |
| C842 | VCCSD41HL330J | J | 33p 50V Ceramic | AA |
| C843 | VCCSD41HL330J | J | 33p 50V Ceramic | AA |
| C1002 | VCEAGA1HW225M | J | 2.2 50V Electrolytic | AB |
| C1003 | VCEAGA1HW225M | J | 2.2 50V Electrolytic | AB |
| C1004 | VCEAGA1HW475M | J | 4.7 50V Electrolytic | AB |
| C1005 | VCEAGA0JW337M | J | 330 6.3V Electrolytic | AB |
| C1007 | VCFYHA1HA104J | J | 0.1 50V M. Polyster | AB |
| C1008 | VCFYHA1HA104J | J | 0.1 50V M. Polyster | AB |
| C1009 | VCKYMN1HB221K | J | 220p 50V Ceramic | AA |
| C1011 | VCKYMN1HB101K | J | 100p 50V Ceramic | AA |
| C1013 | VCEAGA1HW106M | J | 10 50V Electrolytic | AC |
| C1015 | VCKYMN1CY103N | J | 0.01 16V Ceramic | AA |
| C1016 | VCEAGA1HW335M | J | 3.3 50V Electrolytic | AB |
| C1017 | VCEAGA1AW477M | J | 470 10V Electrolytic | AC |
| C1022 | VCEAGA1CW476M | J | 47 16V Electrolytic | AB |
| C1023 | VCKYD41HB151K | J | 150p 50V Ceramic | AA |
| C1024 | VCKYD41HB151K | J | 150p 50V Ceramic | AA |
| C1025 | VCKYD41HB151K | J | 150p 50V Ceramic | AA |
| C1026 | VCKYMN1HB101K | J | 100p 50V Ceramic | AA |
| C1027 | VCKYMN1HB331K | J | 330p 50V Ceramic | AA |
| C1028 | VCKYMN1CY103N | J | 0.01 16V Ceramic | AA |
| C1030 | VCKYMN1HB221K | J | 220p 50V Ceramic | AA |
| C1031 | VCFYHA1HA104J | J | 0.1 50V M. Polyster | AB |
| C1033 | VCKYMN1HB221K | J | 220p 50V Ceramic | AA |
| C1038 | VCEAGA1AW107M | J | 100 10V Electrolytic | AB |
| C1040 | VCKYD41HB471K | J | 470p 50V Ceramic | AA |

### RESISTORS

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| R201 | VRD-MN2BE151J | J | 150 1/8W Carbon | AA |
| R202 | VRD-RA2BE562J | J | 5.6k 1/8W Carbon | AA |
| R203 | VRD-MN2BE392J | J | 3.9k 1/8W Carbon | AA |
| R204 | VRD-MN2BE220J | J | 22 1/8W Carbon | AA |
| R205 | VRD-MN2BE151J | J | 150 1/8W Carbon | AA |
| R206 | VRD-MN2BE471J | J | 470 1/8W Carbon | AA |
| R207 | VRD-RA2EE221J | J | 220 1/4W Carbon | AA |
| R208 | VRD-MN2BE102J | J | 1k 1/8W Carbon | AA |

### RESISTORS (Continued)

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| R211 | VRD-MN2BE561J | J | 560 1/8W Carbon | AA |
| R212 | VRD-MN2BE391J | J | 390 1/8W Carbon | AA |
| R213 | VRD-RA2BE101J | J | 100 1/8W Carbon | AA |
| R214 | VRD-RA2BE681J | J | 680 1/8W Carbon | AA |
| R215 | VRD-MN2BE103J | J | 10k 1/8W Carbon | AA |
| R217 | VRD-RA2BE822J | J | 8.2k 1/8W Carbon | AA |
| R221 | VRD-RU2EE272J | J | 2.7k 1/4W Carbon | AA |
| R222 | VRD-RU2EE103J | J | 10k 1/4W Carbon | AA |
| R223 | VRD-MN2BE102J | J | 1k 1/8W Carbon | AA |
| R225 | VRD-MN2BE223J | J | 22k 1/8W Carbon | AA |
| R232 | VRD-RA2EE681J | J | 680 1/4W Carbon | AA |
| R233 | VRD-RA2BE474J | J | 470k 1/8W Carbon | AA |
| R235 | VRD-RA2EE331J | J | 330 1/4W Carbon | AA |
| R236 | VRD-MN2BE472J | J | 4.7k 1/8W Carbon | AA |
| R237 | VRD-MN2BE472J | J | 4.7k 1/8W Carbon | AA |
| R238 | VRD-MN2BE472J | J | 4.7k 1/8W Carbon | AA |
| R240 | VRD-MN2BE104J | J | 100k 1/8W Carbon | AA |
| R241 | VRD-MN2BE684J | J | 680k 1/8W Carbon | AA |
| R244 | VRD-MN2BE393J | J | 39k 1/8W Carbon | AA |
| R247 | VRD-RA2BE123J | J | 12k 1/8W Carbon | AA |
| R248 | *See Controls* | | | |
| R254 | VRD-MN2BE333J | J | 33k 1/8W Carbon | AA |
| R255 | VRD-MN2BE473J | J | 47k 1/8W Carbon | AA |
| R256 | VRD-MN2BE104J | J | 100k 1/8W Carbon | AA |
| R260 | VRD-RM2HD150J | J | 15 1/2W Carbon | AA |
| R261 | VRD-MN2BE473J | J | 47k 1/8W Carbon | AA |
| R263 | VRD-RA2BE331J | J | 330 1/8W Carbon | AA |
| R267 | VRD-RA2BE472J | J | 4.7k 1/8W Carbon | AA |
| R277 | VRD-RA2BE123J | J | 12k 1/8W Carbon | AA |
| R283 | VRD-RA2BE103J | J | 10k 1/8W Carbon | AA |
| R285 | VRD-RA2EE222J | J | 2.2k 1/4W Carbon | AA |
| R286 | VRD-RM2HD101J | J | 100 1/2W Carbon | AA |
| R301 | VRD-MN2BE102J | J | 1k 1/8W Carbon | AA |
| R302 | VRD-RA2BE102J | J | 1k 1/8W Carbon | AA |
| R306 | VRD-MN2BE103J | J | 10k 1/8W Carbon | AA |
| R308 | VRD-MN2BE103J | J | 10k 1/8W Carbon | AA |
| R309 | VRD-RA2BE103J | J | 10k 1/8W Carbon | AA |
| R313 | RR-XZ0084CEZZ | J | 1 1/2W Fuse Resistor | AB |
| R314 | VRD-MN2BE330J | J | 33 1/8W Carbon | AA |
| R317 | VRD-RA2BE153J | J | 15k 1/8W Carbon | AA |
| R318 | VRD-MN2BE682J | J | 6.8k 1/8W Carbon | AA |
| R319 | VRD-RA2BE104J | J | 100k 1/8W Carbon | AA |
| R320 | VRD-MN2BE472J | J | 4.7k 1/8W Carbon | AA |
| R321 | VRD-MN2BE103J | J | 10k 1/8W Carbon | AA |
| R323 | VRD-MN2BE102J | J | 1k 1/8W Carbon | AA |
| R327 | VRN-VV3AB8R2J | J | 8.2 1W Metal Film | AA |
| R332 | VRD-RA2BE103J | J | 10k 1/8W Carbon | AA |
| R335 | VRD-MN2BE102J | J | 1k 1/8W Carbon | AA |
| R337 | VRD-MN2BE102J | J | 1k 1/8W Carbon | AA |
| R338 | VRD-RA2BE222J | J | 2.2k 1/8W Carbon | AA |
| R340 | VRD-MN2BE103J | J | 10k 1/8W Carbon | AA |
| R410 | VRD-RA2BE153J | J | 15k 1/8W Carbon | AA |
| R411 | VRD-MN2BE223J | J | 22k 1/8W Carbon | AA |
| R412 | VRD-RA2BE333J | J | 33k 1/8W Carbon | AA |
| R414 | VRD-MN2BE223J | J | 22k 1/8W Carbon | AA |

# PWB-A DUNTK7400WEC0
## MOTHER UNIT (Continued)

### RESISTORS (Continued)

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| R420 | *See Controls* | | | |
| R422 | VRD-MN2BE823J | J | 82k 1/8W Carbon | AA |
| R437 | VRD-RA2BE683J | J | 68k 1/8W Carbon | AA |
| R447 | VRD-RU2EE681J | J | 680 1/4W Carbon | AA |
| R450 | VRD-RA2BE681J | J | 680 1/8W Carbon | AA |
| R504 | VRD-RA2BE221J | J | 220 1/8W Carbon | AA |
| R505 | VRD-MN2BE273J | J | 27k 1/8W Carbon | AA |
| R506 | VRD-MN2BE392J | J | 3.9k 1/8W Carbon | AA |
| R507 | VRD-RM2HD182J | J | 1.8k 1/2W Carbon | AA |
| R508 | VRD-MN2BE123J | J | 12k 1/8W Carbon | AA |
| R509 | *See Controls* | | | |
| R510 | VRD-RM2HD1R8J | J | 1.8 1/2W Carbon | AA |
| R511 | VRD-MN2BE822J | J | 8.2k 1/8W Carbon | AA |
| R512 | VRD-MN2BE472J | J | 4.7k 1/8W Carbon | AA |
| R513 | VRD-RA2BE152J | J | 1.5k 1/8W Carbon | AA |
| R514 | *See Controls* | | | |
| R515 | RR-XZ0035TAZZ | J | 22 1/4W Fuse Resistor | AB |
| R516 | VRD-RM2HD331J | J | 330 1/2W Carbon | AA |
| R517 | VRD-RM2HD222J | J | 2.2k 1/2W Carbon | AA |
| R518 | VRD-RA2EE272J | J | 2.7k 1/4W Carbon | AA |
| R520 | VRD-RA2EE275J | J | 2.7M 1/4W Carbon | AA |
| R521 | RR-XZ0029CEZZ | J | 3.3 1/2W Fuse Resistor | AB |
| R522 | VRD-MN2BE102J | J | 1k 1/8W Carbon | AA |
| R525 | VRD-MN2BE681J | J | 680 1/8W Carbon | AA |
| R526 | VRD-RA2EE123J | J | 12k 1/4W Carbon | AA |
| R527 | VRD-RA2EE155J | J | 1.5M 1/4W Carbon | AA |
| R608 | VRD-RM2HD472J | J | 4.7k 1/2W Carbon | AA |
| R609 | VRS-SV3LB392J | J | 3.9k 3W Metal Oxide | AC |
| R611 | VRW-KV4AC120K | J | 12 10W Cement | AD |
| R612 | RR-XZ0020CEZZ | J | 39 1/4W Fuse Resistor | AB |
| R613 | *See Controls* | | | |
| R614 | VRD-MN2BE824J | J | 820k 1/8W Carbon | AA |
| R616 | VRD-RA2BE104J | J | 100k 1/8W Carbon | AA |
| R617 | VRD-RM2HD101J | J | 100 1/2W Carbon | AA |
| R618 | VRS-PU2HB102J | J | 1k 1/2W Metal Oxide | AA |
| R619 | VRD-MN2BE123J | J | 12k 1/8W Carbon | AA |
| R620 | RR-XZ0035TAZZ | J | 22 1/4W Fuse Resistor | AB |
| R621 | VRN-RV3DB3R3J | J | 3.3 2W Metal Film | AB |
| R622 | VRD-RM2HD223J | J | 22k 1/2W Carbon | AA |
| R623 | VRD-RA2EE155J | J | 1.5M 1/4W Carbon | AA |
| R624 | VRD-MN2BE274J | J | 270k 1/8W Carbon | AA |
| R625 | VRD-MN2BE104J | J | 100k 1/8W Carbon | AA |
| R626 | VRD-MN2BE103J | J | 10k 1/8W Carbon | AA |
| R627 | VRD-RA2BE151J | J | 150 1/8W Carbon | AA |
| R628 | VRD-MN2BE223J | J | 22k 1/8W Carbon | AA |
| R629 | VRD-MN2BE123J | J | 12k 1/8W Carbon | AA |
| R630 | VRD-MN2BE472J | J | 4.7k 1/8W Carbon | AA |
| R634 | VRD-RM2HD220J | J | 22 1/2W Carbon | AA |
| R635 | VRD-MN2BE223J | J | 22k 1/8W Carbon | AA |
| R636 | VRD-RA2BE472J | J | 4.7k 1/8W Carbon | AA |
| R637 | VRD-MN2BE472J | J | 4.7k 1/8W Carbon | AA |
| R640 | VRD-RM2HD682J | J | 6.8k 1/2W Carbon | AA |
| R641 | VRD-RA2BE273J | J | 27k 1/8W Carbon | AA |
| R642 | VRD-RM2HD222J | J | 2.2k 1/2W Carbon | AA |
| R643 | VRD-RM2HD151J | J | 150 1/2W Carbon | AA |
| R648 | VRD-RM2HD2R2J | J | 2.2 1/2W Carbon | AA |
| R649 | VRD-MN2BE472J | J | 4.7k 1/8W Carbon | AA |
| R650 | VRD-RA2BE222J | J | 2.2k 1/8W Carbon | AA |
| R651 | VRD-RA2BE101J | J | 100 1/8W Carbon | AA |
| R653 | VRD-RA2BE390J | J | 39 1/8W Carbon | AA |
| R654 | VRD-MN2BE393J | J | 39k 1/8W Carbon | AA |
| R656 | VRD-MN2BE472J | J | 4.7k 1/8W Carbon | AA |
| R657 | VRD-RA2BE151J | J | 150 1/8W Carbon | AA |
| R659 | VRD-RA2BE151J | J | 150 1/8W Carbon | AA |
| R661 | RR-XZ0084CEZZ | J | 1 1/4W Fuse Resistor | AB |
| R662 | VRD-RM2HD562J | J | 5.6k 1/2W Carbon | AA |
| R664 | VRD-MN2BE273J | J | 27k 1/8W Carbon | AA |
| R671 | VRD-RA2BE332J | J | 3.3k 1/8W Carbon | AA |
| R672 | VRD-RU2EE820J | J | 82 1/4W Carbon | AA |
| R701 | VRW-KV3NC6R8K | J | 6.8 7W Cement | AC |
| R703 | VRS-SV3LB273J | J | 27k 3W Metal Oxide | AC |
| R704 | VRS-VV3DB100J | J | 10 2W Metal Oxide | AA |
| R705 | VRD-RM2HD2R2J | J | 2.2 1/2W Carbon | AA |
| R706 | VRD-RA2BE124J | J | 120k 1/8W Carbon | AA |
| R707 | VRD-RA2BE390J | J | 39 1/8W Carbon | AA |
| R708 | VRS-SV3LB124J | J | 120k 3W Metal Oxide | AC |
| R709 | VRD-RM2HD470J | J | 47 1/2W Carbon | AA |
| R710 | VRD-RA2BE392G | J | 3.9k 1/8W Carbon | AA |
| R711 | *See Controls* | | | |
| R712 | VRD-RA2BE681J | J | 680 1/8W Carbon | AA |
| R713 | VRD-RA2EE225J | J | 2.2M 1/4W Carbon | AA |
| R714 | VRD-RA2BE124J | J | 120k 1/8W Carbon | AA |
| R715 | VRD-RA2BE103J | J | 10k 1/8W Carbon | AA |
| R716 | VRD-RA2BE180J | J | 18 1/8W Carbon | AA |
| R717 | VRD-RA2BE101J | J | 100 1/8W Carbon | AA |
| R718 | VRN-VV3ABR22J | J | 0.22 1W Metal Film | AA |
| ⚠ R719 | VRC-UA2HG825K | J | 8.2M 1/2W Solid | AA |
| ⚠ R720 | VRC-UA2HG825K | J | 8.2M 1/2W Solid | AA |
| R723 | VRS-SV3LB272J | J | 2.7k 3W Metal Oxide | AD |
| R724 | VRD-RA2BE102J | J | 1k 1/8W Carbon | AA |
| R725 | VRD-RA2BE820J | J | 82 1/8W Carbon | AA |
| R731 | RR-XZ0016CEZZ | J | 1 1/2W Fuse Resistor | AB |
| R735 | VRD-RM2HD184J | J | 180k 1/2W Carbon | AA |
| R736 | VRD-RM2HD184J | J | 180k 1/2W Carbon | AA |
| R808 | VRD-RA2BE473J | J | 47k 1/8W Carbon | AA |
| R809 | VRD-MN2BE271J | J | 270 1/8W Carbon | AA |
| R811 | VRD-MN2BE271J | J | 270 1/8W Carbon | AA |
| R812 | VRD-MN2BE271J | J | 270 1/8W Carbon | AA |
| R816 | VRD-RA2BE272J | J | 2.7k 1/8W Carbon | AA |
| R817 | VRD-RA2BE562J | J | 5.6k 1/8W Carbon | AA |
| R818 | VRD-RA2BE562J | J | 5.6k 1/8W Carbon | AA |
| R819 | VRD-RA2BE562J | J | 5.6k 1/8W Carbon | AA |
| R825 | VRD-RA2BE103J | J | 10k 1/8W Carbon | AA |
| R828 | VRD-MN2BE683J | J | 68k 1/8W Carbon | AA |
| R829 | VRD-MN2BE104J | J | 100k 1/8W Carbon | AA |
| R832 | VRD-RA2BE271J | J | 270 1/8W Carbon | AA |
| R833 | VRD-MN2BE223J | J | 22k 1/8W Carbon | AA |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|

# PWB-A DUNTK7400WEC0
## MOTHER UNIT (Continued)

### RESISTORS (Continued)

| | | | | | | |
|---|---|---|---|---|---|---|
| R837 | VRD-MN2BE102J | J | 1k | 1/8W | Carbon | AA |
| R838 | VRD-MN2BE102J | J | 1k | 1/8W | Carbon | AA |
| R839 | VRD-MN2BE102J | J | 1k | 1/8W | Carbon | AA |
| R840 | VRD-MN2BE102J | J | 1k | 1/8W | Carbon | AA |
| R841 | VRD-MN2BE102J | J | 1k | 1/8W | Carbon | AA |
| R842 | VRD-MN2BE102J | J | 1k | 1/8W | Carbon | AA |
| R843 | VRD-MN2BE103J | J | 10k | 1/8W | Carbon | AA |
| R844 | VRD-RM2HD681J | J | 680 | 1/2W | Carbon | AA |
| R849 | VRD-MN2BE123J | J | 12k | 1/8W | Carbon | AA |
| R891 | VRD-RA2BE122J | J | 1.2k | 1/8W | Carbon | AA |
| R1006 | VRD-MN2BE153J | J | 15k | 1/8W | Carbon | AA |
| R1007 | VRD-MN2BE123J | J | 12k | 1/8W | Carbon | AA |
| R1008 | VRD-RA2BE101J | J | 100 | 1/8W | Carbon | AA |
| R1009 | VRD-MN2BE472J | J | 4.7k | 1/8W | Carbon | AA |
| R1010 | VRD-MN2BE472J | J | 4.7k | 1/8W | Carbon | AA |
| R1011 | VRD-MN2BE472J | J | 4.7k | 1/8W | Carbon | AA |
| R1012 | VRD-RA2BE223J | J | 22k | 1/8W | Carbon | AA |
| R1014 | VRD-MN2BE392J | J | 3.9k | 1/8W | Carbon | AA |
| R1015 | VRD-RA2BE103J | J | 10k | 1/8W | Carbon | AA |
| R1016 | VRD-MN2BE392J | J | 3.9k | 1/8W | Carbon | AA |
| R1017 | VRD-MN2BE223J | J | 22k | 1/8W | Carbon | AA |
| R1019 | VRD-MN2BE101J | J | 100 | 1/8W | Carbon | AA |
| R1020 | VRD-MN2BE101J | J | 100 | 1/8W | Carbon | AA |
| R1021 | VRD-RA2BE101J | J | 100 | 1/8W | Carbon | AA |
| R1022 | VRD-RA2BE101J | J | 100 | 1/8W | Carbon | AA |
| R1026 | VRD-MN2BE333J | J | 33k | 1/8W | Carbon | AA |
| R1028 | VRD-MN2BE684J | J | 680k | 1/8W | Carbon | AA |
| R1029 | VRD-MN2BE333J | J | 33k | 1/8W | Carbon | AA |
| R1030 | VRD-RA2BE333J | J | 33k | 1/8W | Carbon | AA |
| R1031 | VRD-RA2BE153J | J | 15k | 1/8W | Carbon | AA |
| R1032 | VRS-VV3DB123J | J | 12k | 2W | Metal Oxide | AA |
| R1034 | VRD-MN2BE271J | J | 270 | 1/8W | Carbon | AA |
| R1035 | VRD-RA2BE101J | J | 100 | 1/8W | Carbon | AA |
| R1036 | VRD-RA2BE102J | J | 1k | 1/8W | Carbon | AA |
| R1038 | VRD-MN2BE472J | J | 4.7k | 1/8W | Carbon | AA |
| R1039 | VRD-MN2BE153J | J | 15k | 1/8W | Carbon | AA |
| R1040 | VRD-RA2BE123J | J | 12k | 1/8W | Carbon | AA |
| R1041 | VRD-MN2BE333J | J | 33k | 1/8W | Carbon | AA |
| R1044 | VRD-MN2BE103J | J | 10k | 1/8W | Carbon | AA |
| R1045 | VRD-MN2BE101J | J | 100 | 1/8W | Carbon | AA |
| R1046 | VRD-RA2BE123J | J | 12k | 1/8W | Carbon | AA |
| R1047 | VRD-RA2BE332J | J | 3.3k | 1/8W | Carbon | AA |
| R1048 | VRD-MN2BE102J | J | 1k | 1/8W | Carbon | AA |
| R1049 | VRD-MN2BE102J | J | 1k | 1/8W | Carbon | AA |
| R1050 | VRD-RA2BE102J | J | 1k | 1/8W | Carbon | AA |
| R1051 | VRD-RA2BE152J | J | 1.5k | 1/8W | Carbon | AA |
| R1052 | VRD-MN2BE332J | J | 3.3k | 1/8W | Carbon | AA |
| R1053 | VRD-MN2BE332J | J | 3.3k | 1/8W | Carbon | AA |
| R1054 | VRD-MN2BE153J | J | 15k | 1/8W | Carbon | AA |
| R1055 | VRD-MN2BE683J | J | 68k | 1/8W | Carbon | AA |
| R1056 | VRD-MN2BE153J | J | 15k | 1/8W | Carbon | AA |
| R1057 | VRD-RA2BE472J | J | 4.7k | 1/8W | Carbon | AA |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|

### RESISTORS (Continued)

| | | | | | | |
|---|---|---|---|---|---|---|
| R1060 | VRD-RA2EE331J | J | 330 | 1/4W | Carbon | AA |
| R1061 | VRD-RA2EE181J | J | 180 | 1/4W | Carbon | AA |
| R1062 | VRD-RA2EE681J | J | 680 | 1/4W | Carbon | AA |
| R1064 | VRD-MN2BE123J | J | 12k | 1/8W | Carbon | AA |
| R1065 | VRD-RA2BE683J | J | 68k | 1/8W | Carbon | AA |
| R1066 | VRD-RA2BE682J | J | 6.8k | 1/8W | Carbon | AA |
| R1067 | VRD-RA2EE821J | J | 820 | 1/4W | Carbon | AA |
| R1068 | VRD-RA2EE270J | J | 27 | 1/4W | Carbon | AA |
| R1069 | VRD-RA2EE331J | J | 330 | 1/4W | Carbon | AA |
| R1072 | VRD-MN2BE223J | J | 22k | 1/8W | Carbon | AA |
| R1073 | VRD-RA2BE102J | J | 1k | 1/8W | Carbon | AA |
| R1074 | VRD-RA2BE472J | J | 4.7k | 1/8W | Carbon | AA |
| R1081 | VRD-RA2BE103J | J | 10k | 1/8W | Carbon | AA |

### SWITCHES

| | | | | | |
|---|---|---|---|---|---|
| S501 | QSW-B0015CEZZ | J | Vertical Center | | AC |
| ⚠ S701 | QSW-P0418CEZZ | J | Power | | AK |
| S1001 | QSW-K0076CEZZ | J | Channel (+) | | AB |
| S1002 | QSW-K0076CEZZ | J | Channel (−) | | AB |
| S1003 | QSW-K0076CEZZ | J | Volume (+) | | AB |
| S1004 | QSW-K0076CEZZ | J | Volume (−) | | AB |
| S1005 | QSW-K0076CEZZ | J | Picture Mode | | AB |
| S1006 | QSW-K0076CEZZ | J | Pre-Set | | AB |
| S1007 | QSW-K0076CEZZ | J | Skip | | AB |

### MISCELLANEOUS PARTS

| | | | | | |
|---|---|---|---|---|---|
| CN601 | QCNW-0430PEZZ | R | Connector | | AC |
| ⚠ F701 | QFS-C2026CEZZ | R | Fuse, T2AH | | AE |
| FB301 | RBLN-0037CEZZ | J | Ferrite Bead | | AB |
| FB302 | RBLN-0037CEZZ | J | Ferrite Bead | | AB |
| FB303 | RBLN-0037CEZZ | J | Ferrite Bead | | AB |
| FB602 | RBLN-0010CEZZ | J | Ferrite Bead | | AC |
| FB603 | RBLN-0018CEZZ | J | Ferrite Bead | | AB |
| FB701 | RBLN-0010CEZZ | J | Ferrite Bead | | AC |
| FB702 | RBLN-0037CEZZ | J | Ferrite Bead | | AB |
| FB731 | RBLN-0037CEZZ | J | Ferrite Bead | | AB |
| FH701 | QFSHD1009CEZZ | J | Fuse Holder, for F701 | | AA |
| FH702 | QFSHD1010CEZZ | J | Fuse Holder, for F701 | | AA |
| P301 | QPLGN0241CEZZ | J | Plug 2-pin, (S) | | AA |
| P307 | QPLGN0341CEZZ | J | Plug 3-pin, (YA) | | AA |
| P401 | QPLGN0641CEZZ | J | Plug 6-pin, (Y) | | AB |
| P502 | QPLGN0505CEZZ | J | Plug 5-pin, (F) | | AB |
| P601 | QPLGN0207CEZZ | J | Plug 2-pin, Horiz. Size | | AA |
| P602 | QPLGN0441CEZZ | J | Plug 4-pin, (H) | | AB |
| P603 | QPLGN0341CEZZ | J | Plug 3-pin, (EB) | | AB |
| P711 | QPLGN0207CEZZ | J | Plug 2-pin, (G) | | AA |
| P712 | QPLGN0304CEZZ | J | Plug 3-pin, (A) | | AB |
| P801 | QPLGN0541CEZZ | J | Plug 5-pin, (K) | | AB |
| P802 | QPLGN0641CEZZ | J | Plug 6-pin, (OD) | | AB |
| P1001 | QPLGN0341CEZZ | J | Plug 3-pin, (I) | | AA |
| P1002 | QPLGN0541CEZZ | J | Plug 5-pin, (DB) | | AB |
| | LHLDW1002PEZZ | J | Wire Holder | | AB |

**— End of PWB-A —**

# PWB-B DUNTK6851WEZ8
## CRT SOCKET UNIT

### TRANSISTORS

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| Q851 | VS2SC2611//-1 | J | 2SC2611 | AE |
| Q852 | VS2SC2611//-1 | J | 2SC2611 | AE |
| Q853 | VS2SC2611//-1 | J | 2SC2611 | AE |
| Q854 | VS2SA1015Y/1E | J | 2SA1015(Y) | AC |

### DIODE

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| D851 | VHD1SS119//1E | J | 1SS119 | AA |

### COIL

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| L851 | VP-CF681K0000 | J | 680μH | AB |

### CONTROLS

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| R853 | RVR-B4568CEZZ | J | 10k(B) Red Bias | AC |
| R857 | RVR-B4564CEZZ | J | 1k(B) Green Drive | AC |
| R859 | RVR-B4568CEZZ | J | 10k(B) Green Bias | AC |
| R863 | RVR-B4564CEZZ | J | 1k(B) Blue Drive | AC |
| R865 | RVR-B4568CEZZ | J | 10k(B) Blue Bias | AC |

### CAPACITORS

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| C851 | VCKYD41HB391K | J | 390p 50V Ceramic | AA |
| C852 | VCKYD41HB391K | J | 390p 50V Ceramic | AA |
| C853 | VCKYD41HB391K | J | 390p 50V Ceramic | AA |
| C854 | RC-KZ015JCEZZ | J | 0.01 1.5kV Ceramic | AB |
| C855 | VCEAAA2DW106M | J | 10 200V Electrolytic | AC |
| C860 | VCKYD41CY103N | J | 0.01 16V Ceramic | AA |
| C861 | VCEAGA1CW106M | J | 10 16V Electrolytic | AB |
| C866 | VCKYPA2HB121K | J | 120p 500V Ceramic | AA |
| C870 | VCEAGA1CW476M | J | 47 16V Electrolytic | AB |

### RESISTORS

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| R851 | VRD-RA2BE102J | J | 1k 1/8W Carbon | AA |
| R852 | VRD-RA2BE272J | J | 2.7k 1/8W Carbon | AA |
| R853 | *See Controls* | | | |
| R855 | VRD-RM2HD272J | J | 2.7k 1/2W Carbon | AA |
| R856 | VRD-RA2BE471J | J | 470 1/8W Carbon | AA |
| R857 | *See Controls* | | | |
| R858 | VRD-RA2BE272J | J | 2.7k 1/8W Carbon | AA |
| R859 | *See Controls* | | | |
| R860 | VRS-VV3AB123J | J | 12k 1W Metal Oxide | AA |
| R861 | VRD-RM2HD272J | J | 2.7k 1/2W Carbon | AA |
| R862 | VRD-RA2BE681J | J | 680 1/8W Carbon | AA |

### RESISTORS (Continued)

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| R863 | *See Controls* | | | |
| R864 | VRD-RA2BE272J | J | 2.7k 1/8W Carbon | AA |
| R865 | *See Controls* | | | |
| R866 | VRS-VV3AB123J | J | 12k 1W Metal Oxide | AA |
| R867 | VRD-RM2HD272J | J | 2.7k 1/2W Carbon | AA |
| R868 | VRS-VV3AB123J | J | 12k 1W Metal Oxide | AA |
| R872 | VRD-RA2BE681J | J | 680 1/8W Carbon | AA |
| R873 | VRD-RA2BE681J | J | 680 1/8W Carbon | AA |
| R874 | VRD-RA2BE681J | J | 680 1/8W Carbon | AA |
| R878 | VRD-RA2BE821J | J | 820 1/8W Carbon | AA |
| R879 | VRD-RA2BE822J | J | 8.2k 1/8W Carbon | AA |
| R880 | VRD-RA2BE101J | J | 100 1/8W Carbon | AA |
| R881 | VRD-RA2BE122J | J | 1.2k 1/8W Carbon | AA |

### MISCELLANEOUS PARTS

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| CN851 | QCNW-1341PEZZ | R | Connector 3-pin, (H)-(H) | AF |
| CN852 | QCNW-1342PEZZ | R | Connector 5-pin, (K)-(K) | AF |
| FB851 | RBLN-0037CEZZ | J | Ferrite Bead | AB |
| P851 | QPLGN0341CEZZ | J | Plug 3-pin, (H) | AA |
| P852 | QPLGN0541CEZZ | J | Plug 5-pin, (K) | AB |
| P853 | QPLGN0160CEZZ | J | Plug 1-pin, L3 | AA |
| ⚠ SC851 | QSOCV0826CEZZ | J | CRT Socket | AK |

—— End of PWB-B ——

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|

# PWB-F DUNTK7398WEV1
## 21-PIN UNIT

### INTEGRATED CIRCUIT

| | | | | |
|---|---|---|---|---|
| IC1301 | RH-iX0257CEZZ | J | | AF |

### TRANSISTORS

| | | | | |
|---|---|---|---|---|
| Q1302 | VS2SC945AP/-1 | J | 2SC945A(P) | AB |
| Q1303 | VS2SC945AP/-1 | J | 2SC945A(P) | AB |
| Q1304 | VS2SA1015Y/1E | J | 2SA1015(Y) | AC |
| Q1403 | VS2SC945AP/-1 | J | 2SC945A(P) | AB |
| Q1404 | VS2SC945AP/-1 | J | 2SC945A(P) | AB |
| Q1407 | VS2SC945AP/-1 | J | 2SC945A(P) | AB |

### DIODES

| | | | | |
|---|---|---|---|---|
| D1301 | VHD1SS119//1E | J | 1SS119 | AA |
| D1302 | VHD1SS119//1E | J | 1SS119 | AA |
| D1304 | RH-EX0045TAZZ | J | Zener Diode | AB |
| D1305 | RH-EX0045TAZZ | J | Zener Diode | AB |
| D1401 | VHD1SS119//1E | J | 1SS119 | AA |
| D1403 | RH-EX0030GEZZ | J | Zener Diode | AB |
| D1804 | RH-EX0147CEZZ | J | Zener Diode | AC |
| D1805 | RH-EX0147CEZZ | J | Zener Diode | AC |
| D1806 | RH-EX0147CEZZ | J | Zener Diode | AC |
| D1807 | RH-EX0147CEZZ | J | Zener Diode | AC |

### COILS

| | | | | |
|---|---|---|---|---|
| L1302 | VP-DF3R3K0000 | J | 3.3$\mu$H | AB |
| L1303 | VP-DF120K0000 | J | 12$\mu$H | AB |
| L1304 | VP-DF120K0000 | J | 12$\mu$H | AB |
| L1403 | VP-DF3R3K0000 | J | 3.3$\mu$H | AB |
| L1404 | VP-XFR47K0000 | J | 0.47$\mu$H | AB |
| L1405 | VP-XFR47K0000 | J | 0.47$\mu$H | AB |

### CAPACITORS

| | | | | | | |
|---|---|---|---|---|---|---|
| C1301 | VCEAGA1CW107M | J | 100 | 16V | Electrolytic | AB |
| C1302 | VCKYPA1HF103Z | J | 0.01 | 50V | Ceramic | AA |
| C1303 | VCEAGA1CW106M | J | 10 | 16V | Electrolytic | AA |
| C1304 | VCEAGA1CW106M | J | 10 | 16V | Electrolytic | AA |
| C1305 | VCEAGA1HW105M | J | 1 | 50V | Electrolytic | AC |
| C1306 | VCEAGA1CW476M | J | 47 | 16V | Electrolytic | AB |
| C1307 | VCKYPA1HF103Z | J | 0.01 | 50V | Ceramic | AA |
| C1308 | VCKYPA1HB102K | J | 1000p | 50V | Ceramic | AA |
| C1309 | VCKYPA1HB102K | J | 1000p | 50V | Ceramic | AA |
| C1310 | VCKYPA1HB102K | J | 1000p | 50V | Ceramic | AA |
| C1311 | VCKYPA1HB102K | J | 1000p | 50V | Ceramic | AA |
| C1315 | VCEAGA1HW104M | J | 0.1 | 50V | Electrolytic | AA |
| C1404 | VCEAGA1CW108M | J | 1000 | 16V | Electrolytic | AD |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|

### CAPACITORS (Continued)

| | | | | | | |
|---|---|---|---|---|---|---|
| C1405 | VCKYPA1HF103Z | J | 0.01 | 50V | Ceramic | AA |
| C1406 | VCEAGA0JW477M | J | 470 | 6.3V | Electrolytic | AB |
| C1407 | VCKYPA2HB182K | J | 1800p | 500V | Ceramic | AA |
| C1408 | VCKYPA1HF103Z | J | 0.01 | 50V | Ceramic | AA |
| C1412 | VCEAGA1CW106M | J | 10 | 16V | Electrolytic | AA |
| C1414 | VCKYPA1HB102K | J | 1000p | 50V | Ceramic | AA |
| C1415 | VCEAGA1CW107M | J | 100 | 16V | Electrolytic | AB |
| C1416 | VCEAGA1CW476M | J | 47 | 16V | Electrolytic | AB |
| C1417 | VCCSD41HL100J | J | 10p | 50V | Ceramic | AA |
| C1418 | VCCSPA1HL390J | J | 39p | 50V | Ceramic | AA |

### RESISTORS

| | | | | | |
|---|---|---|---|---|---|
| R1301 | VRD-RA2BE183J | J | 18k | 1/8W | Carbon | AA |
| R1302 | VRD-RA2BE473J | J | 47k | 1/8W | Carbon | AA |
| R1304 | RR-XZ0036TAZZ | J | 15 | 1/4W | Fuse Resistor | AB |
| R1306 | VRD-RA2BE123J | J | 12k | 1/8W | Carbon | AA |
| R1307 | VRD-RA2BE123J | J | 12k | 1/8W | Carbon | AA |
| R1308 | VRD-RA2BE103J | J | 10k | 1/8W | Carbon | AA |
| R1309 | VRD-RA2BE103J | J | 10k | 1/8W | Carbon | AA |
| R1310 | VRD-RA2BE103J | J | 10k | 1/8W | Carbon | AA |
| R1311 | VRD-RA2BE392J | J | 3.9k | 1/8W | Carbon | AA |
| R1312 | VRD-RA2BE682J | J | 6.8k | 1/8W | Carbon | AA |
| R1313 | VRD-RA2BE103J | J | 10k | 1/8W | Carbon | AA |
| R1314 | VRD-RA2BE100J | J | 10 | 1/8W | Carbon | AA |
| R1315 | VRD-RA2BE104J | J | 100k | 1/8W | Carbon | AA |
| R1316 | VRD-RA2BE103J | J | 10k | 1/8W | Carbon | AA |
| R1317 | VRD-RA2BE101J | J | 100 | 1/8W | Carbon | AA |
| R1318 | VRD-RA2BE104J | J | 100k | 1/8W | Carbon | AA |
| R1320 | VRD-RA2BE273J | J | 27K | 1/8W | Carbon | AA |
| R1323 | VRD-RA2BE183J | J | 18k | 1/8W | Carbon | AA |
| R1324 | VRD-RA2BE183J | J | 18k | 1/8W | Carbon | AA |
| R1325 | VRD-RA2EE333J | J | 33k | 1/4W | Carbon | AA |
| R1401 | RR-XZ0036TAZZ | J | 15 | 1/4W | Fuse Resistor | AB |
| R1404 | VRD-RA2BE103J | J | 10k | 1/8W | Carbon | AA |
| R1410 | VRD-RA2BE822J | J | 8.2k | 1/8W | Carbon | AA |
| R1411 | VRD-RM2HD181J | J | 180 | 1/2W | Carbon | AA |
| R1412 | VRD-RA2EE680J | J | 68 | 1/4W | Carbon | AA |
| R1414 | VRD-RA2BE103J | J | 10k | 1/8W | Carbon | AA |
| R1415 | VRD-RA2BE473J | J | 47k | 1/8W | Carbon | AA |
| R1417 | VRD-RA2BE473J | J | 47k | 1/8W | Carbon | AA |
| R1418 | VRD-RA2BE102J | J | 1k | 1/8W | Carbon | AA |
| R1420 | VRD-RA2EE820J | J | 82 | 1/4W | Carbon | AA |
| R1422 | VRD-RA2BE102J | J | 1k | 1/8W | Carbon | AA |
| R1425 | RR-XZ0036TAZZ | J | 15 | 1/4W | Fuse Resistor | AB |
| R1426 | VRD-RA2BE103J | J | 10k | 1/8W | Carbon | AA |
| R1427 | VRD-RA2BE104J | J | 100k | 1/8W | Carbon | AA |
| R1428 | VRD-RA2BE473J | J | 47k | 1/8W | Carbon | AA |
| R1434 | VRD-RU2EE330J | J | 33 | 1/4W | Carbon | AA |
| R1801 | VRD-RA2EE820J | J | 82 | 1/4W | Carbon | AA |
| R1802 | VRD-RA2BE471J | J | 470 | 1/8W | Carbon | AA |
| R1803 | VRD-RA2EE820J | J | 82 | 1/4W | Carbon | AA |
| R1804 | VRD-RA2BE471J | J | 470 | 1/8W | Carbon | AA |
| R1805 | VRD-RA2EE820J | J | 82 | 1/4W | Carbon | AA |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|

## PWB-F DUNTK7398WEV1
### 21-PIN UNIT (Continued)

#### RESISTORS (Continued)

| | | | | | |
|---|---|---|---|---|---|
| R1806 | VRD-RA2BE471J | J | 470 1/8W Carbon | | AA |
| R1807 | VRD-RA2EE820J | J | 82 1/4W Carbon | | AA |
| R1808 | VRD-RA2BE471J | J | 470 1/8W Carbon | | AA |

#### MISCELLANEOUS PARTS

| | | | | |
|---|---|---|---|---|
| CN1301 | QCNW-1513PEZZ | R | Connecting Cord | AR |
| CN1403 | QCNW-1546PEZZ | R | Connecting Cord | AD |
| P1301 | QPLGN0341CEZZ | J | Plug 3-pin, (I) | AA |
| P1302 | QPLGN0441CEZZ | J | Plug 4-pin, (YA) | AB |
| P1401 | QPLGN0641CEZZ | J | Plug 6-pin, (OV) | AB |
| P1402 | QPLGN0541CEZZ | J | Plug 5-pin, (Y) | AB |
| P1403 | QPLGN0241CEZZ | J | Plug 2-pin, (L1) | AA |
| P1801 | QPLGN0641CEZZ | J | Plug 6-pin, (RD) | AB |
| P1802 | QPLGN0641CEZZ | J | Plug 6-pin, (OD) | AB |
| SC1401 | QSOCZ2104CEZZ | J | 21-Pin Socket | AH |

—— End of PWB-F ——

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|

## PWB-H DUNTK7746WEV3
### TELETEXT UNIT

#### INTEGRATED CIRCUITS

| | | | | |
|---|---|---|---|---|
| IC3001 | VHiCF70095/-1 | J | TELETEXT Decoder | BF |
| IC3002 | VHiCF72306/-1 | J | TELETEXT Interface | AR |
| IC3010 | VHiUPC78M05H1 | J | 5V Regulator | AK |
| IC3101 | VHiTA7347P/-1 | J | Video Switch | AG |

#### TRANSISTORS

| | | | | |
|---|---|---|---|---|
| Q3004 | VS2SC1815GW-1 | J | 2SC1815(GW) | AB |
| Q3005 | VS2SA1300//2E | J | 2SA1300 | AC |
| Q3007 | VS2SA1015Y/1E | J | 2SA1015(Y) | AC |
| Q3008 | VS2SC1815GW-1 | J | 2SC1815(GW) | AB |
| Q3011 | VS2SC1815GW-1 | J | 2SC1815(GW) | AB |
| Q3012 | VS2SC1815GW-1 | J | 2SC1815(GW) | AB |
| Q3013 | VS2SC1815GW-1 | J | 2SC1815(GW) | AB |
| Q3014 | VS2SC1815GW-1 | J | 2SC1815(GW) | AB |
| Q3101 | VS2SC1815GW-1 | J | 2SC1815(GW) | AB |
| Q3102 | VS2SC1815GW-1 | J | 2SC1815(GW) | AB |
| Q3103 | VS2SC1815GW-1 | J | 2SC1815(GW) | AB |

#### DIODES

| | | | | |
|---|---|---|---|---|
| D3011 | VHD1SS119//1E | J | 1SS119 | AA |
| D3012 | VHD1SS119//1E | J | 1SS119 | AA |
| D3013 | VHD1SS119//1E | J | 1SS119 | AA |
| D3014 | VHD1SS119//1E | J | 1SS119 | AA |
| D3015 | RH-EX0348GEZZ | J | Zener Diode | AA |
| D3016 | RH-EX0138GEZZ | J | Zener Diode | AA |
| D3017 | VHDBB809///-1 | J | BB809 | AD |
| D3018 | VHD1SS119//1E | J | 1SS119 | AA |
| D3019 | VHD1SS119//1E | J | 1SS119 | AA |
| D3020 | VHD1SS119//1E | J | 1SS119 | AA |

#### PACKAGED CIRCUIT

| | | | | |
|---|---|---|---|---|
| X3001 | RCRSB0099CEZZ | J | Crystal | AH |

#### COIL

| | | | | |
|---|---|---|---|---|
| T3001 | RCiLB0006PEZZ | R | Coil | AE |

#### CAPACITORS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| C3001 | VCCCPA1HH271J | J | 270p | 50V | Ceramic | | AA |
| C3002 | VCCCPA1HH820J | J | 82p | 50V | Ceramic | | AA |
| C3003 | VCCCPA1HH100J | J | 10p | 50V | Ceramic | | AA |
| C3004 | VCQYSH1HM222K | J | 2200p | 50V | Mylar | | AA |
| C3005 | VCFYHA1HA104J | J | 0.1 | 50V | M. Polyester | | AB |
| C3006 | VCFYHA1HA104J | J | 0.1 | 50V | M. Polyester | | AB |
| C3007 | VCCSPA1HL470J | J | 47p | 50V | Ceramic | | AA |
| C3008 | VCFYHA1HA104J | J | 0.1 | 50V | M. Polyester | | AB |
| C3009 | VCKYPA1HB102K | J | 1000p | 50V | Ceramic | | AA |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|

# PWB-H DUNTK7746WEV3
## TELETEXT UNIT (Continued)

### CAPACITORS (Continued)

| | | | | | | |
|---|---|---|---|---|---|---|
| C3010 | VCEAGA1CW106M | J | 10 | 16V | Electrolytic | AA |
| C3011 | VCEAGA1CW226M | J | 22 | 16V | Electrolytic | AB |
| C3012 | VCQYSH1HM103K | J | 0.01 | 50V | Mylar | AA |
| C3013 | VCCCPA1HH221J | J | 220p | 50V | Ceramic | AA |
| C3014 | VCCSPA1HL150J | J | 15p | 50V | Ceramic | AA |
| C3015 | VCCSPA1HL150J | J | 15p | 50V | Ceramic | AA |
| C3016 | VCFYHA1HA104J | J | 0.1 | 50V | M. Polyester | AB |
| C3017 | VCKYPA1HB102K | J | 1000p | 50V | Ceramic | AA |
| C3018 | VCCCPA1HH221J | J | 220p | 50V | Ceramic | AA |
| C3019 | VCEAGA1CW106M | J | 10 | 16V | Electrolytic | AA |
| C3020 | VCKYPA1HB331K | J | 330p | 50V | Ceramic | AA |
| C3025 | VCKYD41CY103Z | J | 0.01 | 16V | Ceramic | AA |
| C3026 | VCEAGA1CW108M | J | 1000 | 16V | Electrolytic | AD |
| C3027 | VCEAGA1CW476M | J | 47 | 16V | Electrolytic | AB |
| C3031 | VCEAGA1CW106M | J | 10 | 16V | Electrolytic | AA |
| C3036 | VCEAGA1CW108M | J | 1000 | 16V | Electrolytic | AD |
| C3101 | VCKYD41CY103N | J | 0.01 | 16V | Ceramic | AA |
| C3102 | VCEAGA1CW476M | J | 47 | 16V | Electrolytic | AB |
| C3103 | VCEAGA1CW106M | J | 10 | 16V | Electrolytic | AA |
| C3104 | VCEAGA1CW106M | J | 10 | 16V | Electrolytic | AA |
| C3106 | VCEAGA0JW107M | J | 100 | 6.3V | Electrolytic | AB |
| C3107 | VCKYPA1HB471K | J | 470p | 50V | Ceramic | AA |
| C3108 | VCKYPA1HB103K | J | 0.01 | 50V | Ceramic | AA |
| C3111 | VCQYSH1HM103K | J | 0.01 | 50V | Mylar | AA |
| C3112 | VCEAGA1CW106M | J | 10 | 16V | Electrolytic | AA |
| C3114 | VCKYD41CY103N | J | 0.01 | 16V | Ceramic | AA |
| C3115 | VCEAGA1CW107M | J | 100 | 16V | Electrolytic | AB |
| C3116 | VCQYSH1HM103K | J | 0.01 | 50V | Mylar | AA |
| C3117 | VCKYD41CY103N | J | 0.01 | 16V | Ceramic | AA |
| C3118 | VCQYSH1HM103K | J | 0.01 | 50V | Mylar | AA |
| C3119 | VCEAGA0JW477M | J | 470 | 6.3V | Electrolytic | AB |

### RESISTORS

| | | | | | | |
|---|---|---|---|---|---|---|
| R3001 | VRD-RA2BE333J | J | 33k | 1/8W | Carbon | AA |
| R3002 | VRD-RA2BE822J | J | 8.2k | 1/8W | Carbon | AA |
| R3003 | VRD-RA2BE103J | J | 10k | 1/8W | Carbon | AA |
| R3004 | VRD-RA2BE103J | J | 10k | 1/8W | Carbon | AA |
| R3005 | VRD-RA2B333J | J | 33k | 1/8W | Carbon | AA |
| R3006 | VRD-RA2BE682J | J | 6.8k | 1/8W | Carbon | AA |
| R3007 | VRD-RA2BE154J | J | 150k | 1/8W | Carbon | AA |
| R3008 | VRD-RA2BE563J | J | 56k | 1/8W | Carbon | AA |
| R3009 | VRD-RA2BE102J | J | 1k | 1/8W | Carbon | AA |
| R3010 | VRD-RA2BE103J | J | 10k | 1/8W | Carbon | AA |
| R3011 | VRD-RA2BE122J | J | 1.2k | 1/8W | Carbon | AA |
| R3012 | VRD-RA2BE821J | J | 820 | 1/8W | Carbon | AA |
| R3013 | VRD-RA2BE821J | J | 820 | 1/8W | Carbon | AA |
| R3014 | VRD-RA2BE821J | J | 820 | 1/8W | Carbon | AA |
| R3015 | VRD-RA2BE272J | J | 2.7k | 1/8W | Carbon | AA |
| R3016 | VRD-RA2BE331J | J | 330 | 1/8W | Carbon | AA |
| R3017 | VRD-RA2BE331J | J | 330 | 1/8W | Carbon | AA |

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|

### RESISTORS (Continued)

| | | | | | | |
|---|---|---|---|---|---|---|
| R3018 | VRD-RA2BE331J | J | 330 | 1/8W | Carbon | AA |
| R3019 | VRD-RA2BE271J | J | 270 | 1/8W | Carbon | AA |
| R3020 | VRD-RA2BE271J | J | 270 | 1/8W | Carbon | AA |
| R3021 | VRD-RA2BE271J | J | 270 | 1/8W | Carbon | AA |
| R3023 | VRD-RA2BE332J | J | 3.3k | 1/8W | Carbon | AA |
| R3024 | VRD-RA2BE332J | J | 3.3k | 1/8W | Carbon | AA |
| R3025 | VRD-RA2BE332J | J | 3.3k | 1/8W | Carbon | AA |
| R3026 | VRD-RA2BE332J | J | 3.3k | 1/8W | Carbon | AA |
| R3028 | VRD-RA2BE272J | J | 2.7k | 1/8W | Carbon | AA |
| R3029 | VRD-RA2BE272J | J | 2.7k | 1/8W | Carbon | AA |
| R3030 | VRD-RA2BE272J | J | 2.7k | 1/8W | Carbon | AA |
| R3035 | VRD-RA2BE102J | J | 1k | 1/8W | Carbon | AA |
| R3036 | VRD-RA2BE103J | J | 10k | 1/8W | Carbon | AA |
| R3037 | VRD-RA2BE103J | J | 10k | 1/8W | Carbon | AA |
| R3040 | VRD-RA2BE102J | J | 1k | 1/8W | Carbon | AA |
| R3041 | VRD-RA2BE103J | J | 10k | 1/8W | Carbon | AA |
| R3057 | VRD-RA2BE223J | J | 22k | 1/8W | Carbon | AA |
| R3058 | VRD-RA2BE472J | J | 4.7k | 1/8W | Carbon | AA |
| R3059 | VRD-RA2BE561J | J | 560 | 1/8W | Carbon | AA |
| R3060 | VRD-RA2BE472J | J | 4.7k | 1/8W | Carbon | AA |
| R3061 | VRD-RA2BE224J | J | 220k | 1/8W | Carbon | AA |
| R3062 | VRD-RA2BE222J | J | 2.2k | 1/8W | Carbon | AA |
| R3063 | VRD-RA2BE103J | J | 10k | 1/8W | Carbon | AA |
| R3064 | VRD-RA2BE472J | J | 4.7k | 1/8W | Carbon | AA |
| R3065 | VRD-RA2BE102J | J | 1k | 1/8W | Carbon | AA |
| R3066 | VRD-RA2BE562J | J | 5.6k | 1/8W | Carbon | AA |
| R3067 | VRD-RA2BE471J | J | 470 | 1/8W | Carbon | AA |
| R3101 | VRD-RA2BE101J | J | 100 | 1/8W | Carbon | AA |
| R3102 | VRD-RA2BE222J | J | 2.2k | 1/8W | Carbon | AA |
| R3105 | VRD-RA2BE272J | J | 2.7k | 1/8W | Carbon | AA |
| R3107 | VRD-RA2BE103J | J | 10k | 1/8W | Carbon | AA |
| R3108 | VRD-RA2BE472J | J | 4.7k | 1/8W | Carbon | AA |
| R3112 | VRD-RA2HE220J | J | 22 | 1/2W | Carbon | AA |
| R3114 | VRD-RA2BE152J | J | 1.5k | 1/8W | Carbon | AA |
| R3116 | VRD-RA2BE102J | J | 1k | 1/8W | Carbon | AA |
| R3120 | VRD-RA2BE122J | J | 1.2k | 1/8W | Carbon | AA |
| R3121 | VRD-RA2BE122J | J | 1.2k | 1/8W | Carbon | AA |
| R3122 | VRD-RA2BE560J | J | 56 | 1/8W | Carbon | AA |
| R3123 | VRD-RA2HE220J | J | 22 | 1/2W | Carbon | AA |
| R3124 | VRD-RA2BE122J | J | 1.2k | 1/8W | Carbon | AA |
| R3125 | VRD-RA2BE560J | J | 56 | 1/8W | Carbon | AA |

### MISCELLANEOUS PARTS

| | | | | |
|---|---|---|---|---|
| | QCNW-1514PEZZ | R | Assembly Connector, (DB)/(EB)/(OD)/(Y) | AW |
| | QPLGN0160CEZZ | J | Plug 1-pin, (L5) | AB |
| P3001 | QPLGN0641CEZZ | J | Plug 6-pin, (Y) | AB |
| P3002 | QPLGN0341CEZZ | J | Plug 3-pin, (EB) | AA |
| P3003 | QPLGN0541CEZZ | J | Plug 5-pin, (OD) | AB |
| P3004 | QPLGN0541CEZZ | J | Plug 5-pin, (DB) | AB |

— End of PWB-H —

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|

## MISCELLANEOUS PARTS

| | | | | |
|---|---|---|---|---|
| CN301 | Q-CNW-1240PEZZ | R | Connector, Speaker | AE |
| SP1 | VSP0080P-G5YB | R | Speaker, 8cm, 32 Ω | AP |
| | LHLDW0001PEK0 | R | AC Cord Holder | AD |
| ⚠ ACC701 | QACCZ2048CESA | R | AC Cord* | AR |

*** Remark:**
**When changing main cord the whole cord with connection plug must be changed.**

The cable is kept as a spare part by:

- SWEEDEN
  SHARP ELECTRONICS (SVENSKA) AB
- DENMARK
  RUDOLPH SCHMIDT A/S
- FINLAND
  ASA KULUTUS ELEKTRONIIKA OY
- NORWAY
  TRANSEL A/S

*** Bemerkung:**
**Bei der Auswechselung des Netzkabels muß das ganze Kabel mit Stecker ausgewechselt werden.**

Hat das Kabel als Ersatzteil vorrätig:

- SCHWEDEN
  SHARP ELECTRONICS (SVENSKA) AB
- DÄNEMARK
  RUDOLPH SCHMIDT A/S
- FINNLAND
  ASA KULUTUS ELEKTRONIIKA OY
- NORWEGEN
  TRANSEL A/S

— End of MISCELLANEOUS PARTS —

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|

## SUPPLIED ACCESSORIES

### ACCESSORIES

| | | | | |
|---|---|---|---|---|
| | QANTR0016PEZZ | R | Rod Antenna, Mono Pole | AS |
| | RRMCG0959PESA | R | Infrared Remote Control Unit | AY |

### ACCESSORIES (*NOT REPLACEMENT ITEM*)

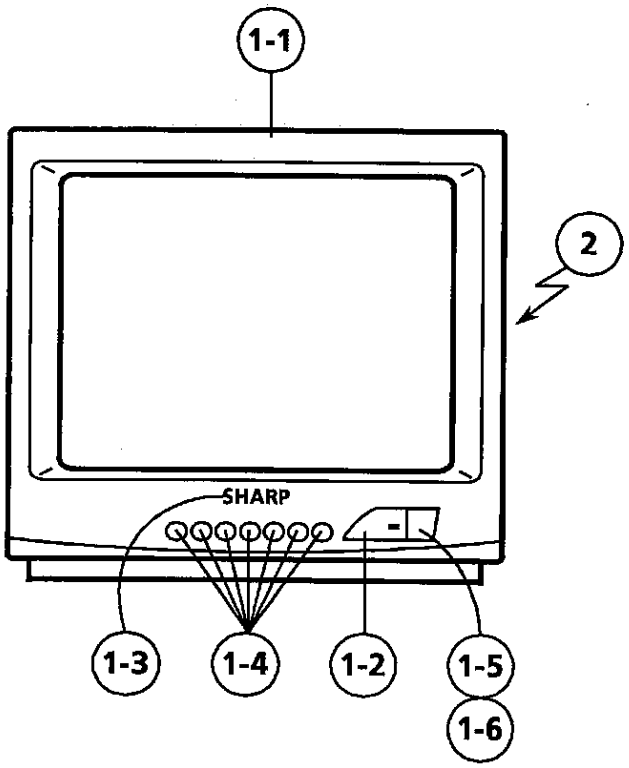
| | | | |
|---|---|---|---|
| TGAN-0046PEZZ | – | Guarantee Card | — |
| TINS-5117PEZZ | – | Operation Manual | — |
| UBATU0023GEZZ | – | Dry Batteries, Size AAA (2 pcs.) | — |

— End of SUPPLIED ACCESSORIES —

## PACKING PARTS
## (*NOT REPLACEMENT ITEM*)

| | | | |
|---|---|---|---|
| SPAKC5781PEZZ | – | Packing Case (GY) | — |
| SPAKC5782PEZZ | – | Packing Case (W) | — |
| SPAKP0056PEZZ | – | Polystyrene Mat | — |
| SPAKX0381PEZZ | – | Packing Material | — |

— End of PACKIMG PARTS —




**CV-4045S (GY):** Metallic gray / Mattgrau-Metallic
**CV-4045S (W):** White / Weiß

| Ref. No. | Part No. | ★ | Description | Code |
|---|---|---|---|---|
| | | | **CABINET PARTS** | |
| 1 | CCABA2178WEV0 | R | Front Cabinet Ass'y (GY) | BB |
| 1 | CCABA2178WEV2 | R | Front Cabinet Ass'y (W) | BA |
| 1-1 | *Not Available* | – | Front Cabinet | — |
| 1-2 | GMADT0102PESA | R | Window Cover | AF |
| 1-3 | HBDGB0010PESB | R | Badge, "SHARP" (GY) | AG |
| 1-3 | HBDGB0010PESA | R | Badge, "SHARP" (W) | AG |
| 1-4 | JBTN-0105PESA | R | Button, Up/Down (GY) | AD |
| 1-4 | JBTN-0105PESB | R | Button, Up/Down (W) | AD |
| 1-5 | JBTN-0106PESA | R | Button, Power | AE |
| 1-6 | MSPRC0002PEFW | R | Spring, for Power Button | AA |
| 2 | CCABB2158WEV0 | R | Rear Cabinet Ass'y (GY) | AZ |
| 2 | CCABB2158WEV1 | R | Rear Cabinet Ass'y (W) | BB |

**— End of CABINET PARTS —**

# Memo

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